

**Learning to Teach**  
**A Phenomenographic Perspective**

**Keith Wood**  
University of London Institute of Education

**Thesis submitted in fulfilment of the requirements for the degree of**  
**Doctor of Philosophy in Education**  
**of the**  
**University of London**

October 1995



## Acknowledgements

Paul Clarke and Linda Thomas were my collaborators on the programme. None of this would have been possible without them. Without the commitment and enthusiasm of the student teachers, there would have been no study. I have changed their names in this report, but I will always feel that in the course of the year I got to know them very well. Stella, Emma, Niul, Rebecca and Henry have given me unceasing support and encouragement without which this thesis would never have been written. My sincere thanks go to all of these and to all of the colleagues with whom I have had the opportunity to collaborate on the process of teaching over the years and who have helped me to learn.

## **Abstract**

### **Learning to teach A phenomenographic perspective**

Learning to teach has been studied by observing and recording the experiences of a group of postgraduate students enrolled on a one-year programme of initial teacher education.

The study attempted to capture the complexity of teaching and what is required for the development of professional expertise in teachers. For the purpose of this study professional expertise is defined in terms of reflective practice characterised by the development of analytic awareness.

The study addressed the question of what learning to teach involves from the perspective of the student teachers enrolled on an initial teacher education programme. The programme was designed to change their ways of experiencing teaching, their understanding and conceptions of teaching and their understanding of the challenges teaching presents to the teacher. The change which student teachers are expected to experience is a change in awareness of what it means to teach a specific content in the secondary school.

The study sought evidence to answer three specific questions:

- (1) What does learning to teach mean to student teachers of economics?
- (2) To what extent do student teachers think of learning to teach as changing awareness of teaching, its constituents and the relations between them?
- (3) What is required for student teachers to learn to teach if learning to teach is defined as changing awareness of teaching?

The study was conducted in the phenomenographic tradition, seeking qualitatively different ways in which the student teachers understood the phenomenon of teaching economics, and describing the structural and referential aspects of the conceptions identified.

Categories of description of the distinctly different ways in which teaching economics is understood have been identified, presented and discussed. The categories have been illuminated with reference to student cases. These form the results of the study.

The results of the study shed light on the ways in which student teachers understand aspects of teaching economics at different stages in a programme of teacher education, and what observed changes over time imply in terms of their learning to teach for the design of an initial teacher education programme.



**Learning to teach**  
**A phenomenographic perspective**

**Chapter One**

<b>Introduction.....</b>	<b>8</b>
--------------------------	----------

**Chapter Two**

<b>The nature of the initial teacher education curriculum .....</b>	<b>11</b>
1. The challenge of reform of initial teacher education in the UK .....	11
2. Theoretical and philosophical perspectives on the development of teachers' professional knowledge.....	13
3. Studies of learning to teach.....	27
3.1. Procedural routines versus understanding of subject matter .....	28
3.2. The development of thoughtful teachers .....	32
3.3. Changing teachers' ways of thinking about teaching .....	35
3.4. Questions which must be addressed by studies of learning to teach .....	38
4. An experiential perspective on learning to teach .....	40

**Chapter Three**

<b>The research design .....</b>	<b>42</b>
1. Methodology .....	42
2. Purpose and strategy of the study .....	44
3. Method of data collection .....	45
4. Analysis of the data .....	50
5. Validity and reliability in phenomenographic studies.....	53
6. Interpretation of the results .....	56

**Chapter Four**

<b>Description of the programme .....</b>	<b>57</b>
1. The aims and organisation of the programme.....	57
2. The intended outcomes .....	59
3. The programme modules.....	61
3.1. The classrooms and learning module (Term 1) - Teaching and learning activities.....	61
3.2. The classrooms and learning module (Term 2) - Teaching and learning activities.....	75
3.3. The curriculum assignment module .....	80
3.4. The Term 3 modules.....	80

## Chapter Five

<b>Results of the study I</b> .....	<b>82</b>
1. Conceptions of teaching economics .....	82
2. Categories of description .....	85
2.1 Conception A	
Teaching as imparting knowledge to pupils .....	85
2.2. Conception B1	
Teaching as preparing pupils to use knowledge .....	89
2.3. Conception B2	
Teaching as providing opportunities to see the existence of different perspectives on a phenomenon .....	93
2.4. Conception C	
Teaching as preparing pupils to be reflective.....	98

## Chapter Six

<b>Results of the study II</b> .....	<b>103</b>
Some quantitative results .....	103

## Chapter Seven

<b>Results of the study III</b> .....	<b>106</b>
1. Qualitative results .....	106
2. Case studies.....	107
2.1. Mark.....	107
2.2. Simon .....	120
2.3. Salif.....	126
2.4. Kim .....	134
2.5. Matthew .....	138
2.6. Melissa .....	145
2.7. Rehana .....	152
2.8. Vicky .....	157
2.9. Gary .....	167
2.10. Emma.....	170
2.11. John .....	176
2.12. Edward .....	180
2.13. Martin .....	182
2.14. Sarah .....	187
2.15. Rod .....	192
2.16. Katerina .....	197
2.17. Rebecca .....	202
2.18. Gillian .....	204
2.19. Jocelyn .....	206

2.20. Harshani .....	210
2.21. David .....	213
2.22. Patrick .....	215
2.23. Nico .....	219
2.24. Suzannah .....	223
2.25. Daniel .....	225
2.26. Tim .....	231
2.27. Dean .....	235

## Chapter Eight

<b>Discussion .....</b>	<b>240</b>
1. Teaching Competence .....	240
2. The Development of Teaching Competence .....	242
2.1. The relationship between approach and outcome .....	245
2.2. Cognitive dissonance .....	246
2.3. Communication and the reproduction of knowledge .....	246
2.4. Using evidence of pupils' thinking .....	247
2.5. Meaningful activities .....	248
2.6. Comparing meanings .....	248
2.7. Assessment .....	249
2.8. Class management and pupil learning .....	250
2.9. Collaboration during teaching practice .....	250
2.10. A relational view of learning .....	253
3. Reflective Practice .....	259

## Chapter Nine

<b>Conclusion .....</b>	<b>262</b>
1. Key findings .....	262
2. Implications for teacher learning .....	263
3. Methodology .....	265
4. Further research .....	265
4.1. Conceptions of learning to teach .....	265
4.2. The structure of awareness .....	266
4.3. Professional development of teacher educators .....	266
4.4. Towards a theory of learning .....	266
5. Finally .....	267
<b>Notes .....</b>	<b>268</b>
<b>References .....</b>	<b>269</b>



# **Chapter One**

## **Introduction**

This is a study of learning to teach undertaken at a time when teacher education is under threat from a reform of education policy in the UK which characterises the preparation of teachers for the secondary school in terms of a set of atomised and narrowly-conceived competences. It is argued that this fails to capture the complexity of teaching and what is required for the development of professional expertise in teachers. For the purpose of this study professional expertise is defined in terms of reflective practice characterised by the development of analytic awareness (Marton, 1994a).

The study addresses the question of what learning to teach involves from the perspective of the student teachers enrolled on an initial teacher education programme. The programme was designed to change their ways of experiencing teaching, their understanding and conceptions of teaching and their understanding of the challenges teaching presents to the teacher. The change which student teachers are expected to experience is a change in awareness of what it means to teach a specific content in the secondary school.

The study asked three questions and sought evidence for its answers:

- (1) What does learning to teach mean to student teachers of economics?
- (2) To what extent do student teachers think of learning to teach as changing awareness of teaching, its constituents and the relations between them?

(3) What is required for student teachers to learn to teach if learning to teach is defined as changing awareness of teaching?

The study was conducted in the phenomenographic tradition (Marton, 1981; 1986), seeking qualitatively different ways in which the student teachers understood the phenomenon of teaching economics, and describing the structural and referential aspects of the conceptions identified.

The subjects of the study were 27 post-graduate students enrolled on the Post-Graduate Certificate in Education programme at the University of London Institute of Education specialising in the teaching of economics during the academic year 1991-92.

The principle method used in this study to uncover the students' understanding of teaching was the semi-structured interview. A small number of pre-determined questions were used which approached the phenomenon under study from a variety of directions to increase the chances of revealing fully in an interview a student's understanding. Responses to the questions were followed up and probed to illuminate a student's thinking about the phenomenon. Interviews took place on four separate occasions during the year of the programme.

Transcripts of the interviews were subjected to phenomenographic analysis to identify the distinctly different ways of characterising the phenomenon of teaching economics from which categories of description emerged.

Categories of description and their illumination with reference to student cases form the results of the study.

The frame of reference for the conceptions was provided by the programme design which was intended to teach the student teachers a particular approach to teaching economics through the use of the same approach to teaching teachers. This approach to teaching is one in which:

"...the teacher does not single out an element of curriculum and then choose a method for presenting it, but rather looks upon it as part of the whole, considers the inter-relatedness of content and approach for

the outcome of learning, sees the learning event from the learner's perspective, and integrates content and form to facilitate and at the same time evaluate the outcome."

(Booth, 1992 p 51-2)

Great care was taken to meet conventional standards with respect to validity and reliability in the analysis of the transcripts by using co-judges with a deep but open familiarity with economics teacher education in the analysis process which, as with all phenomenographic studies of this kind, involved a lengthy period of reading, re-reading and continuous review of emerging categories which were shared with teachers and others in the field to establish their recognition by the teaching community.

The results of the study shed light on the ways in which student teachers understand aspects of teaching economics at different stages in a programme of teacher education, and what observed changes over time imply in terms of their learning to teach for the design of an initial teacher education programme.



## **Chapter Two**

### **The nature of the initial teacher education curriculum**

#### **1. The challenge of reform of initial teacher education in the UK**

ITE in the UK is in danger of an analysis of professional competence which threatens to ignore the complexity of teaching:

“ITE raises typically difficult questions about how the knowledge and understanding which ‘underpin’ effective professional practice are to be acquired and assessed. The difficulty is apparent in the list of ‘competences expected of new teachers’ included with the DES reform proposals (DES,1992). For example, it is hard to see how ‘setting appropriately demanding tasks’ or devising ‘an appropriate range of teaching strategies’ can be separated from a well-informed understanding of how children learn - at different stages in their development, in different curriculum areas, and in different cultural contexts - from which a working definition of what is appropriate should be derived. If that separation is impossible, then good practice cannot simply be observed. An over-specific listing of competences also overemphasises the apparently measurable, overrides differences between subjects and contexts, and is likely to embody a particular model of what constitutes ‘good’ teaching with which many practitioners may disagree.”

(Edwards, 1992 p 128)

The introduction of school-based initial teacher education (DFE,1992) has exposed differing perceptions of teaching competence and how it may be achieved:

“Much of the competence which teachers develop comes from the accumulation of experience, from knowing that certain things work without necessarily being able to offer an explicit justification for doing things that way. There are also routines and rituals, at the ‘technician’ end of practice, which can be learned from observing experienced practitioners. But important as this ‘craft knowledge’ is, especially for new teachers, because so much of it relates to classroom management it is incomplete.

The wide scope of professional development certainly includes the ‘knowledge and love of subject’ which some advocates of entirely school-based training have regarded as sufficient. But even for secondary teachers whose degrees appear to be directly relevant to the national curriculum, there is much work to be done before the subject as learned becomes the subject to be taught. This is a matter both of understanding its structure and particular contributions to a balanced curriculum and of considerable new content.”

(Edwards, 1992 p 131)

Edwards draws attention to two things:

1. the complexity of teachers’ professional knowledge in relation to the need to identify that knowledge and assess its achievement; and
2. the need to take account of the differing perceptions of the participants in the teacher education process and their effect on its quality.

These represent the challenges to a competences approach to teacher education.



## **2. Theoretical and philosophical perspectives on the development of teachers' professional knowledge**

In contrast with the simplicity of the DFE competencies for assessing the outcomes of ITE, Winter (1991) has generated a "statement of the forms of competence which might (in principle) be expected of a professional worker" which could be used to capture the complexity of teachers' professional knowledge. As he points out, Winter has derived the principles from action-research (usually undertaken with the intention of reflecting on practice and developing that practice) "echoing" the work of Schön (1983; 1987) (on reflective practice) and Kolb (1984) (on experiential learning) with the intention of linking practice and understanding in a unified process. This approach to competence goes some way to meeting Edwards's criticism of the DFE competences that they artificially separate practice (eg devising teaching strategies) from understanding (eg how children learn). It emphasises being reflective, collaborative relationships, self-knowledge and self-evaluation, and judgement involving interpretation. This last point addresses the criticism that ITE cannot ignore the existence of different perceptions of teaching amongst the participants in teacher education. There are 12 interdependent elements in the process:

1. The nature of professional work is that situations are unique and knowledge of those situations is therefore never complete. Good practice, therefore, for professional workers, is practice whereby knowledge is developed through the forms of reflection which practice itself requires.
2. It follows that, for professional workers, a given state of reflective understanding will be transformed by further experience of practice, and that (by the same token) future practice will be transformed by the reflection which arises from practice.
3. Professional work involves commitment to a specific set of moral purposes, and professional workers will recognise the inevitably complex and serious responsibilities which arise when attempting to apply ethical principles to particular cases.
4. The responsibility for equitable practice which characterises the professional role commits professional workers to the comprehensive, consistent, conscious, and effective implementation of "anti-oppressive" non-discriminatory principles and practices.

5. Authoritative involvement in the problem areas of clients' lives inevitably creates a complex emotional dimension to all professional work, and professional workers therefore recognise that the role involves understanding and managing the relationship between their own feelings and those of clients.
6. Consequently, professional workers recognise that the understanding of others on which their interpersonal effectiveness depends is inseparable from self-knowledge, and consequently entails a sustained process of self-evaluation.
7. The incompleteness of professional knowledge entails that, for professional workers, relationships with others will be collaborative rather than simply hierarchical, so that the authoritative basis of judgements will always remain open to question. Professional workers are thus on principle willing to learn from others, and recognise that this involves a willingness to place their own prior assumptions and authoritative status (as "experts") at risk.
8. Professional workers recognise that judgements are not simply empirical observations based on objective factual evidence, but always involve interpretations and theoretical, moral, and political assumptions, so that alternative judgements are always possible.
9. For professional workers, effective reflection upon a situation entails a grasp of:
  - a. its relation to its context (eg institutional, legal, and political constraints and opportunities);
  - b. its contradictions and dilemmas;
  - c. its place within a change process.
10. Professional workers will have at their command a grasp of the relationships (similarities and contrasts) between a wide range of situations (different clients, different legal frameworks, and different practice settings).
11. The process of understanding which professional workers will bring to their practice will necessitate independent, critical thought, involving creative translation of meanings between contexts, analysis of problematic situations into constituent elements, and synthesis of varied elements into a unified overall pattern.
12. Professional workers will be aware of available codified information - eg concerning legal provisions, organisational procedures, resources, and research findings, but they will recognise



that the relevance of this information for particular situations always depends on their resourceful interpretation.

(Winter, 1991 pp 18-19)

These forms of competence may not be common in teaching yet. Action-research, from which they derive, is undertaken by a minority of teachers who have consciously decided to enquire into their professional practice as part of a process of professional development.

Teachers may not be routinely involved in the reflective process that Winter describes. For example, Marton (1994a) has reported that out of over one million words spoken by teachers about teaching, in the course of a study aimed at exploring teachers' views of their work and of the context of their work in as much of an "open-minded" way as possible, not a single word was spoken about the way the teachers dealt with some particular content in order to help students learn that content. Marton found support for this finding in other studies. He observed that:

"The impression that we get from the studies...is that the teachers participating in those were rarely oriented towards specific learning aims and hence were rarely focussing on means-ends relations." (p 36)

This finding is supported by Brown and McIntyre (1993) in their study of teachers' craft knowledge. (Although it has been found [Annerstedt, 1991], in contrast, that teacher educators do focus on goals specific for learning the subject to a greater extent than do teachers or student teachers). This general observation underlines the appropriateness of applying Winter's framework to teaching because intrinsic to truly professional behaviour is a focus on the relationship between means and ends. As Eraut (1994) points out:

"Too many theories of professional expertise tend to treat experts as infallible, in spite of much evidence to the contrary. Not only do professionals succumb to many of the common weaknesses which psychologists have shown to be regular features of human judgement; but some allow aspects of their expertise to decay and become a little less relevant or even out of date. Thus there is a need for professionals to retain critical control over the more intuitive parts of their expertise by regular reflection, self-evaluation and a disposition to learn from

colleagues. This implies from time to time treating apparently routine cases as problematic and making time to deliberate and consult.”

(p 155)

These observations underline the importance of taking into account the different perceptions of teachers and teacher educators especially at a time when reform of the system of teacher education is based on encouraging teachers to take on the role of teacher educator.

What does reflective practice in teaching and teacher education involve?

Zeichner (1994) argues that reflective teaching practice is a bandwagon but

“...one cannot tell very much about an approach to teaching or teacher education from an expressed commitment to the idea of the teacher as a reflective practitioner alone. To say that we want to prepare teachers who are reflective, also does not translate directly into the content of a teacher education programme... Underlying the apparent similarity among those who embrace the slogans of reflective practice are vast differences in perspectives about teaching, learning, schooling, and the social order. ” (p 9)

He has attempted to draw some distinctions from the research literature to clarify different conceptions of reflective practice. The distinctions that he has identified are:

- Reflection before, during and after action
- Reflection about teaching; reflecting about the social conditions which influence one's teaching
- Reflection as a private activity to be pursued in isolation by individual teachers; reflection as a social practice and public activity involving communities of teachers
- Reflective teaching as a detailed rational and logical process; reflection as a process imbued with an ethic of care and passion
- The distinction between different levels of reflection by teachers



The last item in the list has given rise to different typologies of levels of reflection. The best known of these is the distinction made by Van Manen (1977) based on the work of Habermas (1974) between technical, practical and critical reflection. Zeichner advocates the promotion of critical reflection in student teachers, preferring to see the critical as one of three domains rather than a 'higher level' of reflection:

“...the critical is right there in front of student teachers in their classrooms...the way to draw their attention to it is to start with student teachers' own definitions of their experience and facilitate an examination of different aspects of that experience...” (p 14)

It can be argued that critical reflection is not an appropriate goal of initial teacher education because schools are not critical institutions or student teachers are not up to it or there are better places to start than with reflection on one's own experience (Sykes, 1986; Calderhead and Gates, 1993 McIntyre, 1993). However, the issues for ITE curriculum developers with respect to levels of reflection remain:

1. Is critical reflection within the capabilities of student teachers? If so, what is the best strategy for helping student teachers to attain it?
2. Is there a hierarchy of qualitatively different kinds of reflection which supports a developmental model of ITE or are all kinds of reflection relevant at every stage of the professional development of teachers?

Zeichner is sure that any view of reflective practice must be in sympathy with the cultural conditions in existence. One writer (Barnett, 1995) who has attempted to analyse ideas about higher education (still the location of the teacher education curriculum in the UK although its position is being undermined by the reform of teacher education), knowledge and society argues that the ideology of academic competence (initiation into the values, ways of seeing, habits of thought, tacit understandings, etc that are characteristic of a discipline) is being displaced by the ideology of operational competence (skills, know-how, outcomes, etc) but, and this is why his argument is worth examining here, he argues that a third alternative interpretation of competence “may be more appropriate”. Barnett describes

this alternative as “reflective knowing”. He finds inspiration, in common with teacher educators like Zeichner, in Jurgen Habermas. The implications for the HE curriculum (and by further implication, while it remains part of the HE curriculum, for the ITE curriculum) of promoting a conception of higher education that goes “beyond competence” as he describes it are listed by Barnett. His list of the experiences which HE should provide resonates strongly with Winter’s statement of the forms of competence which might be expected of a professional worker. Against this comparison, Barnett is seen to be not so much going beyond competence as going into it more deeply to find the curriculum for the development of professional expertise. According to Barnett:

“...higher education should provide experiences to every student which encourage:

1. systematic reflection on one’s own actions (action being interpreted to include one’s own thinking);
2. reinterpretations of the presenting ‘situations’; a curriculum is not a set of impositions on the student but is a set of possibilities and practical hopes in part framed by the student;
3. genuinely open dialogue, with the student being encouraged to develop his or her dialogical competence;
4. adherence to the rules of rational discourse, yet a mutual recognition that the rules conventions and themselves should be interrogated from time to time;
5. a willingness to develop arguments for the appraisal of the other participants on the course;
6. an openness to possible forms of analysis, perspective and argument; a determination not to be hedged in by any particular ‘method’ but to embrace every possible possible perspective and approach;
7. the development and potentially continuous expression of a sceptical outlook;
8. attention (by the students) to and maintenance of the character of the dialogue; being sensitive to the claims of others who wish to enter the dialogue and encouraging them to do so;
9. a continual reappraisal of one’s own learning (aided by peer interaction);



10. testing the implications of and (where appropriate) the validity of the argument in pragmatic situations, where tests of validity include ethical evaluations;
  11. exploring the implications for our social, political, economic and other institutions of the arguments held to have (some) validity.”
- (p 185)

The issue that Barnett’s analysis raises for the development of a teacher education curriculum is whether the cultural conditions are such as to take us beyond competence as it has been narrowly conceived. The difficulty of achieving this should not be underestimated because, as Fish (1995) has observed:

“The government has espoused the Technical Rationality model [see Figure 2.1], though apparently not from any view that it makes for better preparation of teachers but simply because it is cheaper and, being performance-based, yields more easily to industrial notions of quality control.” (p 44)

If the Technical Rationality view of teacher education continues to hold sway the threatened ignorance of the complexity of teaching will be sustained. Teacher education will have been freed from the disciplines approach only to become endangered by a narrow interpretation of competence (cf operational competence) but, if Barnett’s picture of the 21st century captures the new *Zeitgeist*, the development of the reflective teacher education curriculum must be the goal of ITE as for the HE curriculum as a whole. Under these circumstances, Zeichner’s condition would be met and that would allow his challenge to be taken up of “going beyond descriptions of teachers’ reflections”. Zeichner has urged us to recognise that:

“...we need to conduct less research that merely describes teacher thinking and actions and satisfies an intellectual curiosity, and do more research that adopts a partisan stance and attempts to further particular kinds of reflective thinking and action among teachers and to promote the creation of institutional environments supportive of the kinds of teacher reflection and action we want to encourage. I would also like to see less of a detached stance by university researchers studying teachers as ‘the others’, and more collaborative inquiry in

which the practices of both teachers and teacher educators are jointly studied.” (p 20)

TECHNICAL RATIONALITY:	REFLECTIVE PRACTICE:
Follows rules, laws, schedules; uses routines, prescriptions.	Starts where rules fade; see patterns, frameworks.
Uses diagnosis/analysis to think about teaching.	Uses interpretation and appreciation to think about teaching.
Wants efficient systems.	Wants creativity and room to be wrong.
Sees knowledge as graspable, permanent.	Sees knowledge as temporary, dynamic, problematic.
Theory is applied to practice.	Theory emerges from practice.
Visible performance is central.	There is more to it than surface features.
Setting out and testing for basic competences is vital.	There is more to teaching than the sum of the parts.
Technical expertise is all.	Professional judgement counts.
Emphasises the known.	Embraces uncertainty.
Standards must be fixed; standards are measurable; standards must be controlled.	That which is most easily fixed and measurable is also trivial - professionals should be trusted.
Emphasises assessment, appraisal, inspection, accreditation.	Emphasises investigation, reflection, deliberation.
Change must be managed from outside.	Professionals can develop from inside.
Quality is really about quantity of that which is easily measurable.	Quality comes from deepening insight into one's values, priorities, actions.
Takes the instrumental view of learning.	Sees education as intrinsically worthwhile.

Figure 2.1. Contrasting views generating teacher education (adapted from Fish, 1995).



What inspiration is there for a partisan stance?

Reference to Donald Schön's work is an invariant in the burgeoning corpus on professional knowledge and expertise. It is ensured a place because it challenges the appropriateness of the technical rationality model of professional practice. Schön's work appears to be capable of many different interpretations. Eraut (1994) argues that the use of the term 'reflection' by Schön has led to confusion in the thinking of his interpreters and that all of Schön's work can be interpreted as a theory of metacognition but Eraut also allows for the interpretation of the reflective process as a deliberative process during which metacognition has a role to play. Eraut cites the following as features, taken from Schön (1987), which "represent the past, present, and future aspects of the reflective process":

1. Reflection is at least in some measure conscious, although it need not occur in the medium of words. We consider both the unexpected event and the knowing-in-action that led up to it, asking ourselves, as it were, 'What is this?' and, at the same time, 'How have I been thinking about it?' Our thought turns back on the surprising phenomenon and, at the same time, back on itself.
2. Reflection-in-action has a critical function, questioning the assumptional structure of knowing-in-action. We think critically about the thinking that got us into this fix or this opportunity; and we may, in the process, restructure our strategies of action, understandings of phenomena, or ways of framing problems.
3. Reflection gives rise to on-the-spot experiment. We think up and try out new actions intended to explore the newly observed phenomena, test our tentative understandings of them, or affirm the moves we have invented to change things for the better... What distinguishes reflection-in-action from other kinds of reflection is its immediate significance for action.

(Schön, 1987 pp28-9)

Eraut argues that reflection as a deliberative process involves interpretation and understanding of a phenomenon through reflection on what one knows about it involving both impressions that one has and relevant personal and public knowledge bringing personal knowledge (routine behaviour and intuitive thinking) under critical control. He says this involves notions of

‘conceptualisation’ and ‘situational understanding’ found in the literature on professional expertise and that it resembles what he has described as ‘theorising’.

Does research on teacher thinking help with the question of how to develop reflective thinking, or metacognition, among teachers? In a study of teachers’ knowledge and thoughts by Brown and McIntyre (1993), an attempt was made to understand ‘teachers’ professional craft knowledge’ because (the authors argue) of the importance in teacher education of enabling beginning teachers to gain access to such knowledge.

In the report of their study, Brown and McIntyre suggested that the way student teachers might gain access to this craft knowledge is by following the procedures adopted in their research project which were to observe teaching and to ask teachers, as soon as possible after teaching, what underlay their actions. In the discussion of the general findings of the project, Brown and McIntyre reported a

“...relative lack of emphasis in the teachers’ accounts on the particular subject topics they were teaching and on their attempts to facilitate learning related to these specific topics - what Shulman (1986) calls ‘pedagogical content knowledge’.” (p 110)

They relate this to their failure to ask questions about the preparation of lessons and to their non-specialist approach to the study. They missed out, in other words, a part of the reflective process - perhaps a key part - which asks: ‘What is this?’ ‘How have I been thinking about it?’ And thinking about the thinking that got us into this fix or opportunity (Schön, 1987). Brown and McIntyre recognise also that in asking teachers only about what had been successful in their lessons, their findings must be less than comprehensive.

In essence, Brown and McIntyre were only able to report that teaching is complex. They have commented that their general findings and models of teachers’ professional craft knowledge are so abstract and “arid in comparison to the vital reality of the instances of professional craft knowledge in use from which they were derived” (p 112) that their practical value is limited. These general findings could be inimical to reflective practice according to Fish (1995) because such an attempt to develop



generalisations could be used to support a technical rationality approach to teacher education . She has described the work of McIntyre and his colleagues in designing a teacher education programme thus:

“They are developing models of learning to teach which are predicated on the notion that students learn the craft skills of teaching in a first phase of learning to teach and only later, towards the end of their course, learn to reflect upon practice. McIntyre sees reflection as ‘a circumscribed sub-category of theorising’... and argues that there is a limited role for reflection in initial training and that it is rarely practised even amongst experienced teachers.” (p 82)

As McIntyre himself points out, he may have created a problem for himself and his colleagues by conceptualising the professional craft knowledge of teachers as dependent on routinisation and thereby seeking only to gain access to teacher routines.

“The complexity of the professional craft knowledge which we have examined leads us to be uncertain as to how ‘routinised’ or ‘standardised’ the patterns of teacher action can be. Certainly, teachers do not have time to reflect in their classrooms upon the choices open to them , and they very rarely articulate the kinds of thinking they have revealed in this study; but it seems implausible that such complex consideration of conditions, selection from repertoires, and combination of goals and actions should be described as routine. We leave this as an issue deserving more reflection and more research.”

(Brown and McIntyre, 1993 p 112)

This issue has been taken up by Marton (1994a). He argues for a change of focus from teachers’ thinking to a focus on teachers’ ways of experiencing, and awareness of, their professional world. In part, he seeks to bridge a gap between teachers’ pedagogical content knowledge and students’ understanding of the content by relating “students’ ways of being aware of some particular content to the teachers’ ways of being aware of the same content”. This is the gap that runs like a thread through a review of the literature. It is the gap created by the threat of an atomistic, competences view of teaching. It is the gap, the link between means and ends, the closure

of which is at the heart of professionalism. And it is the gap which must be bridged by beginning teachers if they are to develop professional expertise.

Marton challenges the dominant view of human functioning that underlies much research on teacher thinking whether it be from an information processing or constructivist paradigm because it rests on a dualistic ontology. According to the constructivist view, for example, the teacher is confined to his or her representational world separate from the real world. Marton argues that this is an inaccurate view of teachers' ways of functioning because when a teacher is teaching a class, he or she is fully engaged in the ongoing activity. Teachers' acts are not preceded by internal events. Teachers address themselves to the people or things in their surroundings and not to their mental representations. Thinking is not the most interesting aspect of teachers' functioning. Rather it is their awareness that should be the focus of interest. Marton claims that in order to understand teachers better it is necessary to understand the structure of their awareness. He explains the basis for this alternative as follows:

"Such an alternative does not take subject and object as separate entities which we have to find a way of connecting. Instead, we take our point of departure in the relation between subject and object. The reason for doing so is that a subject without an object is inconceivable, just as an object without a subject is... we cannot imagine a human being (the subject) without a world in which he or she is situated. Nor can we imagine him or her without being in touch with his or her world. He or she is perceiving, and there cannot be perceiving without something being perceived; he or she is thinking and there cannot be any thinking without something thought about and so forth. This is the principle of intentionality put forward by Franz Brentano... He tried to distinguish conceptually between psychological and non-psychological phenomena and came to the conclusion that all that is psychological points to something that is beyond itself... One possible implication for research is that we may be interested in exploring the structure of intentionality; the person's directedness, what he or she is oriented towards and in which way."

(Marton, 1994 p30)



This is a research approach which attempts to discover how teachers experience, or conceptualise, their professional world in contrast with attempts to discover if researchers' conceptualisations fit with teachers' representations.

Studies of teachers' awareness (Andersson and Lawenius, 1983 Annerstedt, 1991 Johansson, 1992 Alexandersson, 1994) have revealed:

- teachers participating in the studies were rarely oriented towards specific learning aims and hence were rarely focussing on the means-ends relation, ie there was a relative lack of emphasis on learning and the content of learning;
- teacher educators seem to focus on goals specific for learning the subject to a greater extent than teachers do;
- some teacher educators focus on specific learning goals; others do not.

Marton argues that it is precisely by focussing on learning and the content of learning that the more general capabilities associated with metacognition will be developed.

“The most general learning and thinking capability is thus the capability of experiencing fully, in as focussed and open a way as possible, every phenomenon and every situation in question... this capability can hardly be developed without giving the content of learning the most central role. In actual fact, the most generalisable capability is that of being able as fully as possible to immerse oneself in the specific phenomenon being dealt with. Such a potentially generalisable frame of mind can only be developed by focussing on the particulars - even if there is the aim of developing what is general. Teaching thus always has to take its point of departure in its content, but the way of dealing with this content may have important implications on whether or not the development of more general capabilities (such as, for instance, being able to focus on the specific content) will be facilitated...” (p 38)

One implication of this for the development of an initial teacher education curriculum is that as a central core of that curriculum teachers should focus on the goals of learning and teaching some specific content. These goals are to be seen in terms of the capabilities that their pupils are supposed to develop. These specific goals should be seen in relation to more general goals, and also in relation to the ways in which the teacher could possibly contribute to their achievement.

“Dealing with goals of learning in a specific sense implies... dealing with relations. Relations between content and learner, relations between specific goals and general goals, relations between goals and means... (p 39)

... In the case of teachers, relations reflecting a reasonably high degree of analytic awareness are between the intended goals, and the way in which the students are expected to understand a particular content, on the one hand, and the means by which these goals can be reached, on the other hand... (p 40)

The further implication is that this should be the focus both of teachers in learning to teach a specific subject matter and teacher educators in teaching those teachers. There has to be a consistency of approach of teachers and teacher educators.

Johansson (1992) has studied the focus of teacher educators' awareness and has argued that in order to be able to discuss specific goals of learning in relation to general goals and in relation to methods for reaching those goals, the teacher educator has to have transcended his or her personal experience of the school as his or her knowledge base. This transcendence is what Marton describes as analytic awareness.

“One's own personal experiences do not suffice when it comes to preparing students for a wide range of future situations. There is thus a need to analytically discern comparatively abstract, generative aspects of concrete situations and relate them to each other. This is the way in which means-ends relations or relationships between what is specific and what is general are established.” (p 39)



Johansson has found that this occurs for a teacher educator when he or she finds a frame of reference outside the concrete situation. Finally, the implication is clear. Teacher educators need to find such a frame of reference in order to transcend their “taken-for-granted experiential world as a teacher” (Marton, p 39). This observation should have a particular resonance at a time when much of the responsibility for teacher education in the UK is being transferred to schools. Similarly, provision of such a frame of reference should be the aim of an initial teacher education programme if it is to focus teachers’ awareness on the relationship between means and ends in teaching. This is the relationship that Edwards warns us should not be ignored or devalued in the attempt to simplify school-based teacher education to a list of atomised competences.

### **3. Studies of learning to teach**

At the time that the present study was carried out, articles appeared in the Review of Educational Research (Reynolds, 1992; Kagan, 1992 Grossman, 1992) which provided an overview of a number of the learning-to-teach studies. In one of those articles, Reynolds posed the question: what does it mean to be a competent teacher? A major difficulty she encountered in attempting to use the effective teaching and learning-to-teach research literature to address this question stemmed from what she referred to as an absence of teachers’ views in this work. The phenomenographic methodology used in the present study overcomes this difficulty by providing a means of exploring what learning to teach involves from the perspective of the student teachers experiencing the ITE curriculum. This study attempts to avoid the source of invalidity identified by Reynolds by focusing on teachers’ ways of experiencing, and awareness of, teaching. In other words, by seeking the qualitatively different ways in which student teachers understand teaching specific content, it is possible to describe, in the words of student teachers, what it means to be a competent teacher and to develop an ITE programme using that data source.

### 3.1. Procedural routines versus understanding of subject matter

The experiential approach to developing an ITE programme can be contrasted with cognitivist approaches which underpin both a developmental model of teacher education emphasising the routines of teaching and a model based on the idea of teachers reconstructing internal mental representations of teaching. Both of these models lead their adherents to support a particular configuration for the ITE curriculum. For example, a developmental model of teacher education gained support from Kagan after she reviewed 40 qualitative studies of learning to teach. From this review, she claimed she was able to identify enough consistency and complementarity to support the emergence of a developmental model of professional development. She argued that the studies provided a picture of the student teacher as one who:

- comes to a teacher education programme with a preconceived view of teaching and learning shaped by “exemplary models of teachers” and an “image of self as learner;
- uses information provided by the programme to confirm rather than to confront this preconceived view;
- sees contradictions in the views of teaching and learning by the school-based and HEI-based elements of the course;
- is “obsessed with class control, designing instruction, not to promote pupil learning, but to discourage disruptive behaviour.”

And that professional growth appeared to consist of at least five components:

1. An increase in metacognition: Novices become more aware of what they know and believe about pupils and classrooms and how their knowledge and beliefs are changing;
2. The acquisition of knowledge about pupils: Idealised and inaccurate images of pupils are reconstructed. Knowledge of pupils is used to modify, adapt and reconstruct the novice’s image of self as teacher.
3. A shift in attention: As the image of self as teacher is resolved, a



novice's attention shifts from self, to the design of instruction, to pupil learning.

4. The development of standard procedures: Novices develop standardised routines that integrate instruction and management and grow increasingly automated.
5. Growth in problem solving skills: Thinking associated with classroom problem solving grows more differentiated, multidimensional and context specific. Eventually, novices are able to determine which aspects of problem solving repertoires can be generalised across contexts. (Kagan, 1992 p 156)

Kagan also noted inconsistencies in the studies. For example, one of the studies (Bennett, 1991), using student teachers' concept maps of teaching, challenged the finding of a lack of connection between the HEI coursework and practical teaching experience. Another study found conceptual change among novice teachers perhaps due to the particular programme requirement that student teachers should interact with and study pupils as they learned.

Kagan concluded that the studies were divided on the existence of reflection developed by teacher education programmes. She identified the problem in identifying reflective thinking highlighted by Zeichner (1994).

"The particular way an investigator defines and operationalises higher level problem solving, thinking or self-reflection may determine the nature of the findings."

(Kagan, 1992)

The question of whether student teachers do manage to shift their focus of attention from themselves to their pupils' learning remained largely unresolved by the studies. Although, there is some evidence (Richert, 1990) to suggest that asking student teachers to reflect privately through their writing is more likely to result in reflection on issues related to self. Compared, that is, with reflection on lesson plans with peers which is more likely to lead to reflection on ways to teach content to particular pupils. What the researcher chooses to collect as data (private diaries, records of

collaboration lesson-planning, etc) appears to affect this outcome of a learning-to-teach study (Grossman, 1992).

There was to an extent contradictory evidence from the studies about the effect of the relationship between the student and the tutor (or supervisor in school) on student learning. The potential benefit of cognitive dissonance, resulting from working with a tutor who has a different view of teaching and learning, had to be set against the discomfort caused.

The emerging model that Kagan identified from these studies is a developmental, stage model which she claimed confirms Fuller's developmental model (Fuller and Brown, 1975) and Berliner's (1988) model of teacher development based on cognitive studies of expertise. The inferences that she felt able to draw from this review of 40 studies of learning-to-teach are not without their detractors. Kagan's review provides support for the technical rationality model through her emphasis on the development of standard procedural routines at the outset of a teacher education programme:

"A primary goal of precourse programmes should be providing procedural knowledge to novices and promoting the acquisition of standardised routines that integrate management and instruction...Instead of decrying student teachers' interests in quick fixes and tricks of the trade, perhaps teacher educators should acknowledge that this is a genuine, mostly unmet need." (p 162)

Attention has already been drawn to the criticism that has been levelled at the Technical Rationality model. Such criticism is to be found in the learning-to-teach literature. In strong disagreement with Kagan's view that "procedural routines appear to be the sine qua non of teaching", a paper by Grossman (1992) refers to (if not exactly reviews) another substantial proportion of the learning-to-teach literature excluded from Kagan's review. Grossman argued that the full body of research on the professional growth of student teachers does not support a developmental model. She contrasted Kagan's emphasis on procedural routines with the body of research that views teaching as centrally concerned with the learning of worthwhile content alternatively summed up in the phrase "understanding of subject matter is a sine qua non in teaching" (Feiman-Nemser and Parker, 1990, p 40).



It is of course possible to suggest that this view of teaching is represented in Kagan's model by the conclusion that in their development teachers shift the focus of their attention to pupil learning. However, the issue of whether to put the emphasis on 'tricks of the trade' or subject matter understanding is at the heart of the question of what and how to teach student teachers. What might a different set of studies, for example those arising from the knowledge growth in a professional research (Shulman, 1987), reveal about the processes involved in learning to teach?

"A significant number of the studies omitted from this review use teachers' growth in their understanding of subject matter, or the development of pedagogical thinking or pedagogical context knowledge, as their starting point. By producing a generic review of professional growth, Kagan fails to attend to the different challenges faced by teachers of different subject matters at various grade levels. In essence, the missing paradigm of subject matter, so long absent from research on teaching (Shulman, 1986), is still missing in Kagan's review."

(Grossman, 1992 p 172)

Grossman listed a number of objections to a stage, developmental model of learning to teach which focuses on teaching routines early on and puts off until later critical enquiry and reflection on the understanding of subject matter that teaching is intended to bring about:

- Student teachers are perhaps inevitably concerned with issues related to the teaching of subject matter early on in teacher educator programmes (Grossman and Richert, 1988 Shulman, 1987).
- Grossman quotes six further studies which have shown that teacher education courses can help student teachers to focus on issues related to teaching and learning of subject content.
- "...there is no evidence that having developed classroom routines that work, teachers will necessarily begin to question these routines. In fact there is evidence that suggests otherwise: As preservice teachers master the routines of teaching, many become satisfied with

their teaching and less likely to question prevailing norms of teaching and learning...student teachers may learn to manage pupils and classrooms without learning to teach...studies of experienced teachers indicate that neither procedural knowledge nor experience alone leads teachers to address the many issues associated with alternative approaches to the teaching and learning of maths or history..."

(Grossman, 1992 p 174)

This evidence provides the most telling indictment of a stage model of learning to teach which starts with the tricks of the trade. Having learnt the tricks, the student teachers quickly become 'old dogs' - reproducing existing practices (Lortie, 1975).

- Teaching is complex. It is not simply a case of establishing control and then focussing attention on subject content and pupil learning.

"How teachers manage classrooms enables or constrains the possibilities of teaching, classroom discourse and student learning. How teachers manage classrooms must depend on their ultimate goals for students. Management is not neutral but carries within it its own implicit theories of instruction..."

(Grossman, 1992 p 174)

In essence, the counter-argument that emerged from an alternative sampling of learning-to-teach studies supports the view that the complexity of teaching requires that student teachers have simultaneously to think about classroom management, social roles, teaching and learning.

### **3.2. The development of thoughtful teachers**

There is a body of literature on teacher education that suggests that student teachers can be helped to develop a frame of reference for asking meaningful questions relating the goals of teaching and the learning of content.

One example from that perspective on teacher education is presented by Duffy (1994) who proposes that the development of understanding in pupils



requires “thoughtful, adaptive teachers”. He has identified what each characteristic of this learning requires of such teachers:

- Authentic experience

Teachers should create tasks based on authentic, situated experiences and, in the pursuit of that task, to integrate content from various subject matter areas, to guide students to more mature understandings of content, and to develop higher order thinking and skills, strategies and techniques, and procedures associated with thoughtfulness (Newmann, 1990).

- Conceptual change as the goal

“On the one hand, the teacher must honour students’ ‘inventions’ or they will not share them. On the other hand, the teacher needs to guide students toward a more mature understanding, which frequently means challenging student constructions”

(Prawat, 1992 p 11)

To do this, teachers must analyse such situations themselves and decide what sense students are making of them. Teachers must make judgements when making interventions based on an analysis of the contextual situation.

- Personal, social and cultural aspects of learning

Learning is expedited by personal awareness of how learning occurs (metacognition) and by the social and cultural conditions in which learning occurs (collective construction of knowledge). Learning is enhanced when people are aware of what they are learning, why they are learning it, and how to do it. This calls for teacher thoughtfulness. Rather than dispensing knowledge, teachers must create opportunities for students to know and know how they know; they must listen to students, interpret their statements and decide what to do next. Teachers must take on-the-spot decisions.

- The generative aspects of learning

Generative learning requires that students generate knowledge, create understanding, construct new interpretations, and make judgements based on values and appreciation as well as on rationality. To promote generative thinking, teachers must cultivate student thinking, which means that teachers themselves must think and make judgements.

This perspective is an extension of Newmann's (1990) work on thoughtfulness which provides a framework for combining higher order thinking involved in tasks that present non-routine challenges (of teaching) and knowledge of subject matter.

If teaching, in contrast with the assumptions of Kagan's developmental model, is seen as presenting non-routine challenges involving knowledge of subject matter, this perspective integrates a challenge to the notion that teachers should be prepared with knowledge of routine procedures and an emphasis on subject matter knowledge. What might it look like in practice?

Out of experience of developing a teacher education programme in Northern Michigan intended to generate thoughtful teachers, Duffy identified what are for him the characteristics of such a preservice programme:

- Student teachers must come to understand teaching by making sense of experiences of teaching. To do so means that student teachers must not be exposed to what Duffy calls a "technical model of teaching", ie the use of prescriptive teacher behaviours and actions that 'work'.
- Student teachers must learn in school environments in which the aim is to seek meaning.
- Tutors, teachers in school and student teachers must collaborate in helping student teachers to:

"learn to inquire about professional work: how to think about dilemmas of teaching, how to analyse innovative ideas, how to frame problems of teaching as problems for study, how to determine what would be useful evidence, how to collect evidence as a part of everyday teaching, how to use



evidence to think about instruction, and how to generate improvements from the evidence gathered". (p 22)

### 3.3. Changing teachers' ways of thinking about teaching

Kennedy and Barnes (1994) writing from a similar perspective claim that research on learning, and on teacher learning in particular, suggests that the task of teacher education is to help student teachers to change their entire way of thinking about teaching: their beliefs about how pupils learn, about what is important to learn, and about how teachers can facilitate student learning; their knowledge of students, of subject matter, and of teaching; their professional values; their skills; and the persona they adopt as teachers. These things they describe as "personal resources" which are included in "internally consistent modes of operation" (MOs). To teach teachers, teacher educators have to help student teachers become aware of their MOs and to change them. They describe a teacher education programme at Michigan State University designed to achieve this. In designing the programme they faced six major challenges:

1. Student teachers need time to reconceptualise the task and reconstruct their MOs.
2. Changes in understanding must be brought about either by meaningful learning through linking new ideas to existing ones (Resnick, 1989) or by some challenge to existing ideas (Posner, Strike, Hewson and Gertzog, 1982).

Student teachers often think they have the characteristics of an ideal teacher and just need the 'tricks of the trade' (Kennedy and Barnes, 1994).

3. Changing one or two components of the MO without influencing the rest may be ineffective in bringing about change.

"Any given teaching net entails, at a minimum, a consideration of both the subject matter and the students, and these two considerations alone bring in not only teachers' knowledge about

each of these but also their assumptions about how learning occurs in general, their notion of what is most important for students to learn, their sense of persona and their ability to reason about all these together.” (p 201)

4. Important ideas must be situated in practical contexts that give them meaning. It is salutary to remember that naive MOs are situated.
5. Practical situations must reinforce a new teaching MO and not a naive MO. Student teachers can easily slip back if they are not able to use a new MO to interpret their experiences (Feiman-Nemser and Buchmann, 1985).
6. Student teachers’ emotional resistance to changing MOs has to be managed somehow.

Kennedy and Barnes report on attempts to build a teacher education programme designed to respond to the six challenges above. The key elements of the Michigan State programme which relate to the challenges are:

1. Students can enrol in pre-admission courses that explore learners, learning and the school; the course spans 3 years alongside subject matter studies; it is a five year programme in total.
2. Use of video analysis and the asking of questions such as: ‘why did this action make sense to the teacher you are watching’? In contrast to simply judging the teacher’s action right or wrong. When it works, this forces students to take an alternative point of view. Starting with student teachers’ questions, eg about management of classes - because this conversation soon turns to broader issues, eg about pupil learning. The programme incorporates these ideas in two courses:
  - (i) Reflections on learning, which addresses questions such as: What is learning? Who is capable of learning what? Where and how does learning happen? What can teachers do to enable learning? And it draws on students’ own experience as the



context for considering learning experiences of others and theories of learning;

- (ii) A course on the nature and consequences of student diversity.
3. Student teachers are taught in the way the program designers want them to teach. Student teachers are helped to make connections through the use of a spiralling curriculum structured around central questions and problems of practice. There is a movement away from courses as chunks of knowledge and towards the integration of content around key questions, eg What is worth knowing and learning in school? How does one teach that which is worth knowing? What does it mean to be a professional who is capable of teaching worthwhile knowledge? These questions are considered in the light of specific subject matter. In this way, attempts are made to develop student teachers' own understanding of the discipline of study. By focusing student teachers' attention on what pupils know and believe about a discipline, this might help student teachers see the gaps in their own knowledge. Kennedy and Barnes do point to a disadvantage of this type of programme which is that creating coherence needs 'meetings of minds' of staff teaching the courses, and that invites criticism that courses are based on a 'party line'. Of course, this is not the intention. Rather the intention is to get student teachers to think for themselves.
  4. Discussions about teaching and learning draw on evidence from classrooms.
  5. Student teachers experience a variety of classroom contexts.
  6. Students collaborate on planning, observation and review. And schools are used where collaboration can occur. Collaboration does not always work, however, because negative cliques can grow up and students who think they are good sometimes withdraw from collaboration.

The outline description of the North Michigan State course is of interest to teacher educators because it has been designed to meet the challenges which

emerge from a cognitivist (albeit constructivist) perspective on teacher thinking with the goal of student teachers reconstructing their MOs. It illustrates a combination approaches to creating thoughtful, flexible teachers who focus on the object of teaching in terms of pupils' learning. To summarise, the thoughtfulness literature on teacher education provides a framework for designing a teacher education programme intended to change student teachers' ways of thinking about teaching towards focusing on meaning. This framework includes the following prompts:

- Start with student teachers' views of teaching but do not stay with the concerns about class management. Find ways to put these concerns in the context of creating learning experiences.
- Avoid the making of easy judgements - successful and unsuccessful - about teachers' practices by having student teachers think about outcomes in relation to the observed teacher's plan.
- Focus on pupils' learning - what pupils know and believe about a discipline.
- Teach student teachers as we want them to teach. The subject matter is 'teaching subject x'. Key questions need to be consciously addressed by tutors and student teachers such as: What is worth knowing about teaching subject x? (cf. what is worth knowing about x?); How does one teach what is worth knowing?
- Ensure student teachers genuinely collaborate over planning, teaching and review.
- Ensure genuine collaboration among the staff teaching the teachers takes place to ensure coherence so the aims and practice of teaching are shared.

### **3.4. Questions which must be addressed by studies of learning to teach**

This overview of the ways in which the challenges of teacher education have been identified and are being met crystallises out many of the questions



which must be addressed by the initial teacher education curriculum if the threat of a technical rationality model of teacher education is to be lifted. These questions relate to approaches to teaching and learning outcomes.

- Learning outcomes

- Is it possible to create learning experiences which will allow student teachers to rethink their views about teaching and learning?
- Is it possible to develop metacognition in student teachers which allows them to be aware of what they know and believe about teaching and learning?
- Is it possible to shift the focus of attention of student teachers from self-as-teacher to pupil learning?
- Is it possible for student teachers to think simultaneously about classroom management, social roles, teaching and learning and, in so doing, learn to teach in a meaningful way?
- What is reflection on teaching and how do we know it when we see it?
- What part does cognitive conflict or dissonance play in learning to teach?

- Approaches to teaching

- Is it possible to eradicate perceptions of a contradictory view of teaching from HEIs and schools?
- Is it possible to achieve the above by concentrating first on classroom management or is this shift of focus more likely to occur by concentrating on the complexity of teaching and learning requiring that classroom management and the purpose of subject content learning are seen to be connected?

- Is it possible to “use teachers’ growth in their understanding of subject matter, or the development of pedagogical thinking, or pedagogical content knowledge” (Grossman, 1992) as the starting point for a successful teacher education programme?
- Are student teachers inclined to focus on issues relating to teaching of subject matter early on in a teacher education programme?
- Does the development of classroom management routines, independently of consideration of issues of subject matter, diminish student teachers’ ability to question these routines when considering alternative approaches to the teaching and learning of subject matters? Does an emphasis on a technical rationality model of teaching act as a constraint on perceptions of what it is possible to achieve in teaching, classroom discussion and pupil learning? In other words, does emphasis on classroom management routines create influences on teaching?

#### **4. An experiential perspective on learning to teach**

The phenomenographic methodology used in the present study provides an experiential perspective on learning and takes a fundamentally different stance towards cognition from that of cognitive psychology which informs the work reviewed here. The work of Berliner (1988) which is referred to above uses schematic theory and studies of cognition underlying expert and novice performances in teaching to infer a five stage model of teacher development. It is an example of research into learning to teach carried out within educational psychology. The overarching interest of such research is to investigate human cognition. An example of recent work in the UK within this general paradigm drawing on a novice-expert model is the Exeter University PGCE (Dunne and Harvard, 1993) which, it has been suggested by Fish (1995) lends itself to a Technical Rationality approach to teacher education .



The fundamental difference between these approaches and the approach of the present study, as has been pointed out above, is that in exploring teachers' awareness, or the qualitatively different ways that teachers understand teaching, cognition is seen as a relation between the individual and the world not as mental representations. In summary, research into teaching from a cognitive psychology perspective is concerned with the structure of the learner's knowledge; the research described in this study is concerned with the learner's experience of learning. The use of this methodology allows new light to be thrown on the questions raised by previous studies precisely because it takes the second order perspective on student teachers' thinking about learning to teach. To clarify the distinction that is being made here, it can be said that a description of approaches to teaching based on observing teachers is a first order method or takes a first order perspective, while a study of teaching from the perspectives of the teachers is a second order method. In this study, the second order perspective on student teachers' thinking about learning to teach in response to the framework provided by the initial teacher education programme is the subject of study.

## **Chapter Three**

### **The research design**

#### **1. Methodology**

The research methodology used in this study was phenomenography. In an entry in the International Encyclopedia of Education, Marton (1994b) describes this as:

“... the empirical study of the limited number of qualitatively different ways in which various phenomena in, and aspects of, the world around us are experienced, conceptualised, understood, perceived, and apprehended. These differing experiences, understandings, and so forth are characterised in terms of ‘categories of description’, logically related to each other, and forming hierarchies in relation to given criteria. Such an ordered set of categories of description is called the ‘outcome space’ of the phenomenon concept in question.”

Bowden (1994) distinguishes ‘pure’ phenomenography, as it is described by Marton, from developmental phenomenography which he describes as:

“... research which, through finding out how people experience some aspect of their world, will enable them or others to change the way their world operates, normally in a formal educational setting.”

He describes this as developmental because:



“... it is undertaken with the purpose of using the outcomes to help the subjects of the research, usually students, or others like them to learn. The insights from the research outcomes can help in the planning of learning experiences which will lead students to a more powerful understanding of the phenomenon under study, and of other phenomena like it. The outcomes from these research studies can also be used to develop generalisations about better and worse ways to organise learning experiences in the particular field of study. The research outcomes and the way they are obtained can be used in training or development programmes for teachers as an analogy to demonstrate ideas about teaching and learning. The focus of the research is therefore as much on the participants in the study and on the nature of the data collection process which triggers their contribution, as it is on the phenomenon under study.” (p 4)

This describes the present study well. In this study insights were sought into the way teaching was experienced by student teachers which would help in the planning of learning experiences intended to lead to a more powerful understanding of teaching. The study used a methodology that could be called developmental phenomenography but there was also an element of ‘pure’ phenomenography in the analysis of the transcripts of interviews with participants to develop a set of categories of description of teaching.

In using a phenomenographic methodology the study makes a particular ontological commitment as Marton (1994c) puts it:

“... pedagogical questions rest on the methodology used to illuminate them and... methodological questions are contingent on ontological commitments... Phenomenography rests on a non-dualistic ontology...”

Marton has argued that:

“...only through this realisation can we clarify what kind of entities experiences, conceptions, understandings are... [they] refer to subject-object relations of internal nature. Our world is one which is always understood in one or in another; it cannot be defined without someone defining it. On the other hand, we cannot be without our world. However, we can focus on the object or on the subject aspect of the

subject-object relations that experiences consist of. When focussing on the former, we ended up with the conclusion that an object is the structured complex of all the different ways in which it can be experienced. When focussing on the latter, we came to the conclusion that we are always aware of everything, although the way in which we are aware is situationally variable. Both these conclusions may seem highly counter-intuitive. However, what they imply is that we should explore - without too many preconceived ideas - what the world we experience is like, on the one hand, and what our way of experiencing the world is like, on the other hand. And of course, these are not two things. They are one.” (p 100)

This commitment to a non-dualistic ontology was present at two levels in this study - in the methodology used to study the outcomes of the PGCE curriculum programme and in the design of the programme which used the same methodology to address pedagogical questions.

## **2. Purpose and strategy of the study**

The purpose of the study was to make sense of student teachers’ understanding of, or ways of experiencing, teaching as they progressed on a one-year initial teacher education programme, and to use the sense they were making of teaching to develop appropriate teaching interventions for the programme. The purpose of the programme was to develop student teachers’ understanding of teaching by focusing their attention on making sense of their pupils’ understanding of, or ways of experiencing, economic concepts in the context of the secondary school curriculum.

The research design and the programme design were reflections of each other in the following sense. The programme design (see Chapter 4) was a spiral curriculum for teacher education involving theory, action and reflection (or in other words, a process of planning, teaching and review). The intended outcome of that process was the development of understanding of subject matter for teaching related to pupils’ ways of seeing, or conceptions of, economic phenomena. Similarly, this research design for a study of the teacher education



curriculum involved a spiral of theory, action and reflection (analysis, interventions and phenomenographic interviews - see Figure 3.1). The intended outcome of the research was the development in student teachers of a more powerful understanding of teaching competence related to their ways of seeing, or conceptions of, teaching.

The research design has a sharper focus than the programme design because it formalises the process of review through the systematic collection of data by phenomenographic interviews. But it remains the case that the teacher education programme reflects the research orientation of this study by intending to make student teachers' classrooms the subject of their 'research'.

This research was a systematic, longitudinal study. The method of data collection was by interviewing student teachers on how they viewed teaching at four stages during the one-year programme. The focus running through the investigation was to relate the emerging categories of description of conceptions of teaching to students' learning experiences.

The expected outcomes of this research comprised two elements: (1) a set of categories of description of the conceptions of teaching held by this group of student teachers, and (2) illuminative case studies of the relationship between student teachers' developing conceptions of teaching and the learning experiences of the programme. It was intended that these outcomes would, first, contribute to the development of some generalisations about better and worse ways of organising learning experiences for student teachers and, secondly, provide insights into ways to plan teacher education programmes which would lead to a more powerful understanding of teaching competence.

### **3. Method of data collection**

The interviews were intended to be opportunities for exploring student teachers' meanings for, understanding of, or awareness of teaching. They were intended to hold a mirror to the awareness of the interviewees and, for this reason, were to be conducted in such a way as to elicit as full and as open a response as possible. They were not seen by the interviewers as

opportunities to teach the students but, because of their reflective nature, it was always possible that student teachers would learn from this process.

The team of tutors conducting the interviews met to discuss the questions to be used at each stage of the study. To maintain the close focus on the relationship between the sense the students were making of the programme and their learning experiences, questions were designed which would reveal the sense interviewees were making of aspects of the programme as the programme itself moved on (see Figure 3.2). The concepts which underpinned the dialogue in the interviews were teaching and learning, although the questions were not always of a 'what is ...?' type.

All of the students on the programme were interviewed.

The conversations that took place in the interviews were of the kind described by Marton (1986) as characteristic of a phenomenographic interview:

"What questions are asked and how we ask questions, of course, are highly important aspects of the method. For present purposes it will suffice to say that we used questions that are as open-ended as possible in order to let the subjects choose the dimensions of the question they want to answer. The dimensions they choose are an important source of data because they reveal an aspect of the individual's relevance structure. Furthermore, though we have a set of questions at the start of the interview, different interviews may follow somewhat different courses." (p 42)

The interviewees were encouraged to reveal, through discussion, their ways of understanding teaching. As Bowden (1994) puts it, "to disclose their relationship to the phenomenon under consideration". Interviewees were encouraged to express their qualitative understanding of teaching. The interviewers took care to ask for clarification and to probe meanings further with questions such as: 'Could you say more about that?' 'What do you mean?' And 'Is there anything you would want to add to your answer?' These questions encouraged the interviewees to reflect on the meaning they had for the phenomenon by explaining their understanding more fully and revealing the way they understood. Pointing out inconsistencies in what had been said at different times in the interview was an effective way of





encouraging interviewees to reflect on the meaning they had for a phenomenon.

The team of tutors shared the outcomes of the interviews and commented on the way interviews were conducted in order to improve their interview technique. A major concern for the interviewers was that their own ideas about teaching and learning should not be introduced into the dialogue.

Francis (1993) has argued that if the reader of a phenomenographic report is to be persuaded that what is reported really does reflect interviewees' understandings then the report should address the following questions:

- (1) What sort of prompts were used in the interviews, what did the interviewer estimate to be their effects and how were such estimates made?
- (2) In what ways was the conduct of the interview leading?
- (3) What were the intended leads which ensured that the interview stayed on target?
- (4) What steps were taken to check the participants' understandings of the purpose of the interview and their role within it?
- (5) What can be said to convince the reader of the report that the interview faithfully records and communicates what the interviewee said about the experience under discussion?

In this study the main prompts were the interview questions listed here. Rephrasing and checking of interviewees responses was employed as well as the aforementioned questions of the type which invited expansion such as 'Would you like to add anything?' to ensure that the interview recorded as full an account of the meaning given to the experience by the interviewee. Of course, as the illuminative cases record, not all interviews achieved the goal of probing all meanings. This became apparent in the analysis of the transcripts and was faithfully recorded in the cases. In some cases leading questions were asked and, as a result, the interpretation of the responses had to take this into account.



#### INTERVIEW I

Who was a good teacher when you were in school? Tell me about them.

What do you think will be developed in you when you become a teacher?

How do you expect that to occur?

What is learning to be a teacher as far as you are concerned?

What do you see as the relationship between yourself, the others on the course and us (the tutors)?

Sum up your job in the classroom.

#### INTERVIEW II

Here is a list of activities undertaken in the first weeks of the programme. What do you think was the intention of these? Which were most important, which least?

What is the difference between teachers and learners?

What is the point of teaching in pairs?

#### INTERVIEW III

Using an example from your teaching practice, or some other teaching episode, explain what your view of learning is.

Working in pairs, how was it?

#### INTERVIEW IV

After a year on the course, tell me something that you have learnt.

If you had to decide what student teachers on the course would have to learn next, what would it be?

If you had to teach another group what you have learnt, how would you go about it?

What does it mean to learn economics?

What does it mean to learn to teach economics?

Figure 3.2. Interview questions.



The intention of the programme as it has been described here that student teachers should use a phenomenographic methodology in their own teaching made it more than likely that they were in a position to understand the aims of the interviews and their subsequent analysis. The tutors, or interviewers, were seen to be using the methods that the student teachers were using themselves in seeking the meanings of economic phenomena held by their pupils. This created a common sense of purpose.

In these ways steps were taken to meet Francis's demands with respect to the interview procedure.

#### **4. Analysis of the data**

Phenomenographic analysis is difficult to describe. It is heuristic, contrasting with an algorithmic approach. There is no simple recipe to follow but neither is the method mysterious. It can be compared with the practices of 'grounded theory' research as described by Glaser and Strauss (1967). The researcher needs a multi-faceted understanding of the domain of the phenomenon of interest, in this case teacher education, together with an open attitude towards it. The material must adequately cover the relation between the subjects of interest and the phenomenon which is the focus of the research. The researcher must immerse himself in the material adopting an open attitude at first which becomes progressively more focused. It requires a reflective stance so that the researcher can step back at any time from the data and reflect on the relation between the subject and the phenomenon which is indicated by the item of data under consideration. It requires also that the researcher can reflect on the relation between the researcher and both the subject and the phenomenon revealed by the data under consideration. It demands a determination and ability to communicate what are elusive and complex ideas to other researchers and professionals in the field in as careful and fully described a way as possible. Booth (1992) has described the method of phenomenographic analysis in detail as follows:

“...what the phenomenographer actually does is to take the material collected and study it thoroughly, reading it several times and taking



different perspectives on it, and always seeking distinctively different ways in which the subjects characterize the phenomenon of interest. The material forms a "pool of meaning" in that within it are to be found the ways in which the phenomenon of interest is understood by - what it means to - not only the actual research subjects but also the group from which they are a theoretical sample. If the material is in the form of interviews, they will be read one by one in their entirety, and they will be read side by side, switching from one to the other. Extracts will be marked, notes will be made, precis will be made of some sections. Different research efforts will call for different, creative, approaches. After some time differences and similarities in what people have said are seen, distinctly different ways of characterizing the phenomenon of interest begin to emerge, and after that the researcher will see to what extent these proto-categories of description fit all the material. Thus preliminary ideas get refined, and the material is returned to, maybe for confirmation or maybe with an entirely new perspective on it.

The process of studying the material from scratch might occur more than once and different perspectives might emerge, or deliberately be adopted, all according to the researcher's goals and research framework. At the same time, reference might be made to the literature on the subject, thus lending new insights and suggesting new angles for study. There is a persistent desire for parsimony in the set of ways of understanding, for as in all scientific endeavour, simplicity and completeness are complementary goals. Eventually it is felt that a satisfactory set of ways in which the subjects understand the phenomenon of interest has been arrived at, and that fewer or simpler or more rigorous categories are not to be found. Then there are two further stages left: description of the results and consideration of their structural properties and relationships."

(Booth, 1992 pp 62-63)

In this study the first approach to the analysis of the transcripts involved some delimiting of the area of investigation. The interviews covered a number of facets of the programme including student teachers' understandings of teaching, of learning, of collaboration and so on. The analysis was undertaken by the writer of this report with the findings

presented at regular bi-weekly meetings of the course team who had conducted the interviews and devised and taught the programme. At the outset this team insisted that all the text of the transcripts should be used in the analysis but with the emergence of the various facets, the complexity of the data became apparent. Clearly, the transcripts held the meanings of more than a single phenomenon so it was agreed that the analysis would focus on the understandings or experiences of teaching present in the data. The transcripts continued to be taken as a whole in the way of the phenomenographic method since within descriptions of collaboration or learning were to be found statements describing the experience of, and meaning given to, teaching on the part of the student teacher. These statements could be compared and contrasted with statements elsewhere in the transcript. The researcher attempted to bracket preconceptions and was, of course, helped in this by having to present the analysis at successive stages to other members of the team all of whom were experienced teachers and teacher educators.

Bracketing preconceptions had to be achieved against a background of the researcher's own experience of teaching and learning, and of reading the phenomenographic studies of learning (see Beaty, Dall'Alba and Marton, 1990), and an awareness that teaching and learning were the two sides a single coin.

The process of analysis at meetings to consider the emerging categories and the evidence for their existence provided by the transcripts continued until it was agreed that a set of categories of description had been established which best described the data. The process of constructing and reconstructing the categories to take account of criticisms and shortcomings identified by the team was a process of discovery. Involving the team in this process increased the likelihood of reliability of the categories. The categories which best described the data used the transcripts as exhaustively as possible and did not leave out any material. (The illuminative cases indicate examples where difficulties in placing data in categories occurred) . In this way the conceptions of teaching were described as faithfully as possible.

Francis (1993) has identified what she described as problems associated with phenomenographic analysis. These are in brief:



(1) It may not be wise to involve the interviewer in the analysis because prior knowledge may have an effect on the approach adopted.

(2) Steps must be taken to bracket preconceptions and yet at the same time some kind of prioritising is necessary.

(3) Criteria are needed for guiding the steps taken in the iterative process towards a final classification.

In the present study it was possible to maintain a continued focus on these problems through the involvement of the interviewing and teaching team in the process of analysis in the way described here. The illuminative cases record problems which arose with the classification of individual transcripts although it has to be stressed that the study was not seeking to identify individuals' conceptions but to make sense of the pool of meanings provided by the transcripts as a whole.

At a general level, Francis (1993) has raised the issue of how it is possible to be sure that a phenomenographic finding is genuinely independent. At the same time she has pointed out that if any general theory is to be developed, there is a need to see whether further work supports that which has gone before it

## **5. Validity and reliability in phenomenographic studies**

Is it possible to claim that this phenomenographic research is valid and reliable?

Taking validity first, the reader of this study will want to know what justification can be given for presenting this work and for making the claims that are made based upon it.

In a similar phenomenographic study, Booth (1992) defined three aspects of validity as they may be deemed to apply to phenomenographic research:

### (1) Content-related validity

For content-related validity to be claimed, it is necessary for the research to be grounded in a sound understanding of the subject content. The researcher must have a deep but open familiarity with the topics taken up in the interviews. Open here refers to the willingness of the researcher to seek ways of understanding which differ from those generally accepted.

### (2) Methodological validity

For methodological validity, the study should be designed and carried out according to phenomenographic principles. The collection of data should be undertaken in a deep and open mode, and analysis should continually question the data in the search for categories of description.

### (3) Communicative validity

(a) The results and conclusions of the study should be capable of understanding and discussion by the actors in the area of the study. This may, but not necessarily, include the subjects of the research. It must include teachers and others working in the field who should be able to recognise the results which are described.

(b) The results and conclusions should be communicable to the research community through their situation and establishment in the research field in question.

An attempt was made to ensure the content-related validity of this study through an open approach to the discovery of ways of understanding teaching on the part of the team of tutors and the present researcher. This was manifested in the design and teaching of the programme and the analysis of the outcomes. All members of the team had taken the opportunity to develop expertise in the area of teacher education and all identified closely with the topic. All members of the team were specialists in the field of economics education and the development of economic understanding and had published widely in this area. All members of the team had studied phenomenographic research methodology with acknowledged experts in the field.



The methodological validity of this study was felt to be high due to the choice of subjects for the study. The subjects were all of the students enrolled on the PGCE programme in a particular year. The interviews were undertaken as an integral part of the programme. This was understood by the subjects. The interviews focused on the student teachers' experience of the programme. And, as far as possible, the interviewers adopted a reflective approach to the interviews, aware that they were collecting data to be used to further the aims of the study. In the few cases where the conduct of the interviews led to difficulties in the analysis this has been highlighted in the illuminative case studies (for example, see the cases of Melissa, Rod and Patrick). These cases have been presented in as open a way as possible to allow further scrutiny. Throughout the study the guiding principle was a search for the meaning of teaching held by the student teachers.

Communicative validity has been tested by presenting the results and conclusions of the study as part of a series of dialogues with student teachers, teachers and academic colleagues working in the field of teacher education. These dialogues have not in any way cast doubt on the validity of this study.

Turning to reliability, one test suggested for use in phenomenographic research relates to the repeatability of the analysis. In this study co-judging, as it is often referred to, was achieved by ensuring that the initial stages of the study were a group undertaking. This has been described here.

It was also possible to compare the categories of description with those obtained by other studies in the same field. Similar categories were seen to have emerged (Marton, 1994dTrigwell,1994).

Finally, it has been suggested by Booth (1992) that a further test of reliability is provided by a consideration of the internal logic of the categories and their relation to the logic of the phenomenon to which they refer. In this study such a test has been applied in the dialogues referred to above.

## **6. Interpretation of the results**

The results of the study are the conceptions of teaching held by the student teachers on the programme obtained using a phenomenographic research methodology.

The results are also the illuminative cases in which an attempt was made to relate the meanings held by the student teachers to the interventions of the programme. These are rooted in phenomenography because the conceptions discovered through the phenomenographic analysis were used as the means of identifying the effects of the interventions of the programme on the development of the students' understanding of teaching. The interventions were intended to generate the kind of reflective awareness that is part of the phenomenographic research methodology.

The categories of description of conceptions of teaching obtained from the phenomenographic study provide objectives for teacher education or, to put it another way, identify views of teacher competence. The teacher education programme described here was itself developed using objectives emerging from a practical commitment on the part of its designers to a developmental phenomenographic approach.

This developmental phenomenography, as Bowden (1994) has described it, ensured the coherence of the results of the study.



## **Chapter Four**

### **Description of the programme**

#### **1. The aims and organisation of the programme**

The ITE curriculum programme which is the subject of this study was intended to promote reflective thinking and action among student teachers in relation to the links between student teachers' content knowledge (and its development into pedagogical content knowledge in the process) and their pupils' understanding of the content. It was to be achieved by relating pupils' ways of being aware of each particular content to the student teachers' ways of being aware of that content. The programme was designed as a spiral curriculum. This was clearly related to the work of Kolb (1984) on experiential learning and Schön's notion of a reflective practitioner. It added a new interpretation to both by conceptualising reflective practice as the development of analytic awareness. With a specific focus on the relationships between means and ends in teaching and learning, student teachers were expected to learn from the experience of working with pupils in classrooms in collaboration with HEI tutors, teachers and fellow students. As part of this experience a specific content was to be operationalised as a process of reflection-action-theory. As an iterative process (see Figure 4.1) applied to new content and contexts for teaching that content, it was intended to develop the analytic awareness of the individual student teacher thus disposing him or her to theorise - "to interpret, explain or judge intentions, actions and experience" (Eraut, 1994) - about the relationship between means and ends in teaching.

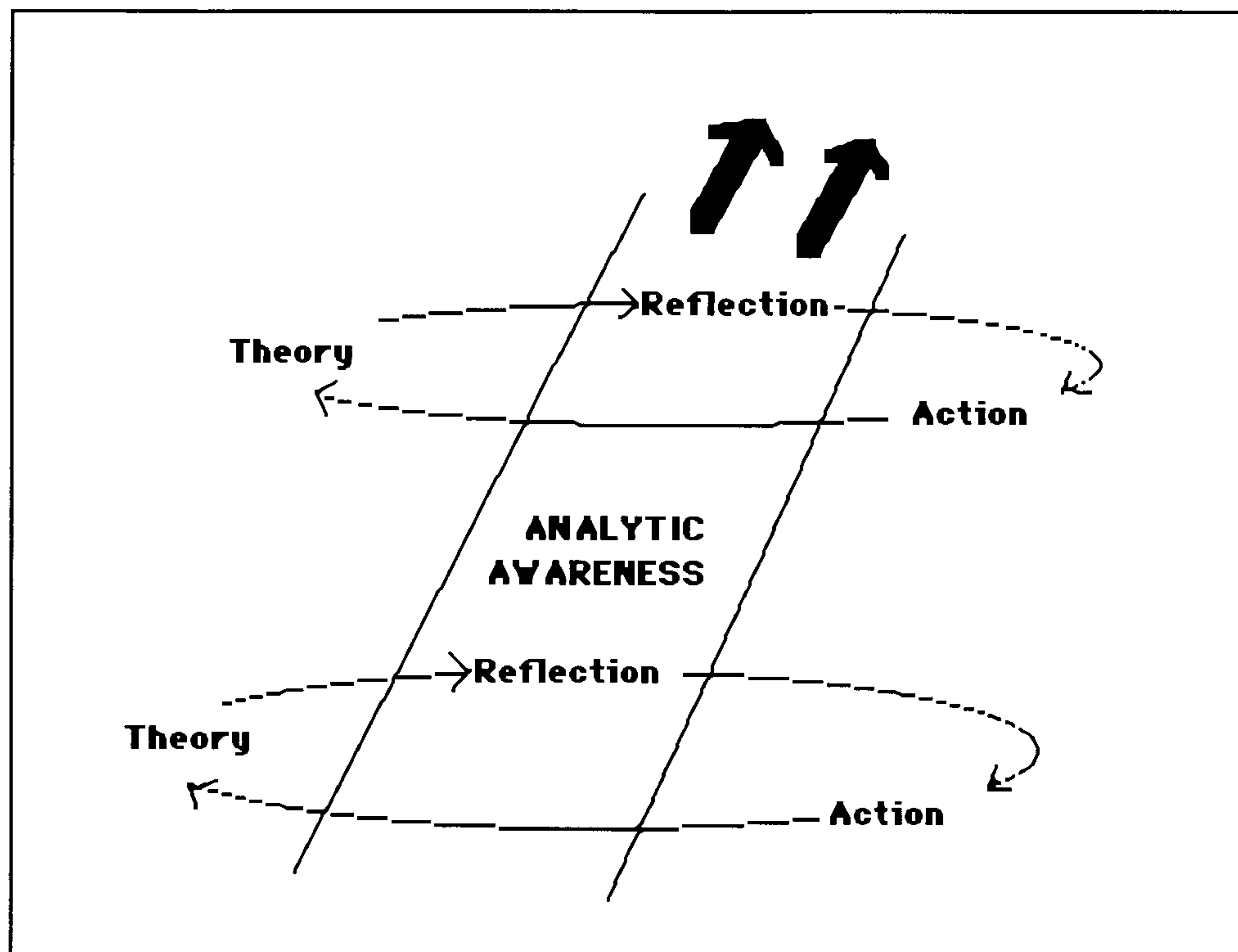


Figure 4.1. An iterative process of reflection-action-theory

The spiral curriculum was presented to the student teachers as a plan-teach-review process, ie collaborative lesson planning, followed by teaching and review drawing on evidence of pupils' learning which would inform replanning and development: (1) the planning stage involving reflection and action, (2) the act of teaching, and (3) review involving reflection on the learning outcomes in relation to the plan (the development of theory and action). It is important to point out that the programme was not prepared in detail at the outset but rather was developed organically through the use of a plan-teach-review process by the tutors - a second spiral. The analysis of the interviews at each stage which formed part of the research design was a major stimulus for the tutors' review process and planning of subsequent reviews and interviews. The interview was intended to be a reflective mirror held to the individual student's awareness. The opportunities for reflection on action, both on the part of the student teachers and the tutors, are discussed in some detail in the illuminative cases of individual students as they progressed with the programme

In what follows there is a description of the course as it was presented to the student teachers including some of the written responses of the students to



activities included in the programme. These responses provided another source of stimulus for the tutors' review and planning of their teaching.

## **2. The intended outcomes**

The intended outcomes of the course were that student teachers should:

2.1. be capable of developing their pupils' economic understanding. This involves:

### 2.1.1. Planning

- clarifying teaching objectives in terms of a precise statement of the economic understanding which is to be developed in pupils
- relating that statement to pupils' initial understanding

### 2.1.2. Teaching

- creating resources and learning experiences to allow pupils to change the focus of their thinking

### 2.1.3. Review

- through a process of collaborative review, evaluating the success of the learning experience in achieving the stated objectives

2.2. be capable of working collaboratively in classrooms and in the wider educational community so as to:

### 2.2.1. Promote learning for meaning in pupils by:

- encouraging pupils to adopt a deep level processing strategy (Marton and Saljo, 1976)
- promoting classroom thoughtfulness (Newmann, 1990)
- making pupils self-conscious about their own learning

2.2.2. Apply the same criterion to their own learning by:

- adopting a deep level processing strategy
- taking up a self-conscious stance with respect to their own learning

2.3. have a grasp of particular curricular opportunities and contexts within the National Curriculum and the post-16 curriculum. This means to:

- practise teaching economics and related subjects in specialist courses
- practise teaching the cross-curricular themes such as Economic and Industrial Understanding as part of the whole curriculum
- identify ways in which the economics/industry/work-related curriculum may be developed.

2.4. be aware of the inter-relationship of the above since planning, teaching and review

- is always related to a particular context
- always takes account of learning for meaning.



### **3. The programme modules**

The programme was designed to run over three terms of one year. It comprised seven modules:

- |          |   |
|----------|---|
| Module 1 | Classrooms and Learning   |
| 2        | Teaching Practice   |
| 3        | Curriculum Assignment   |
| 4        | Developments in the 16-19 curriculum - Economics and vocational education |
| 5        | Work experience and economics   |
| 6        | Assessment  |
| 7        | Business Education  |

Modules 1 and 2 extended in that repeated sequence over Terms 1 and 2. Module 3 required students to write an assignment of between 6 and 10,000 words based on their teaching experience. Modules 4, 5, 6 and 7 were shorter modules taught in Term 3. Teaching Practice in the second part of Term 1 required the students to collaborate on practical teaching for 4 days per week with a fifth day reserved for planning and review with Institute tutors. Teaching Practice in the second part of Term 2 required the students to collaborate on practical teaching for 5 days per week.

During periods of practical teaching (Module 2) students worked with teachers in school and were visited by Institute tutors.

Modules 1 and 2 taking up the first two-thirds of the course were key modules with respect to students' learning. Modules 4-7 explored new contexts.

#### **3.1. The classrooms and learning module (Term 1) - Teaching and learning activities**

The intention of the first part of this module was to focus student teachers' thinking on their own learning in preparation for teaching. There are three aspects to this focus:

- the level of processing of stimulus
- searching for meaning
- the effect of reflective variation

### 3.1.1. Activity 1

This module opened with individual interviews of the students with the three Institute tutors responsible for the programme. The interviews lasted up to 15 minutes each and were intended to provide data which could be used in planning, review and evaluation of the programme. The interview questions asked of each student were:

- Who was a good teacher when you were in school? Tell me about them.
- What do you think will be developed in you when you become a teacher?
- How do you expect that to occur?
- What is learning to be a teacher as far as you are concerned?
- What do you see as the relationship between yourself, the others on the course and us (the tutors)?
- Sum up your job in the classroom.

The interviews were conducted so as to allow the students to respond as fully as possible to each question. The interviews were recorded and transcribed.

### 3.1.2. Activity 2

After the interviews the students were set a task based on the work of Marton and Saljo (1984) on learning from text. The students were given a short text to read (a part of a text used by Marton and Saljo) with the instruction that they should prepare themselves to answer some questions about it two days later.



In the session which followed two days later, students were asked to record and share some individual responses to the questions:

- What do you remember of its content?
- Could you describe how you went about reading the text?
- Was there anything that you found difficult?
- Did you find it interesting or not?
- Whilst reading, was there anything that struck you as particularly important?

(Adapted from Marton and Saljo, 1984)

In groups, students were asked to explore all the responses and look for differences and similarities (in categories) and to record and share the contents of their categories.

The intention of the activity was to make the students conscious of the way in which differences in the learning process account for differences in outcome (ie the different ways in which the message of the text read had been understood). Essentially, students who did not get the point of the passage failed to do so simply because they were not looking for it. Drawing on the work of Marton and Saljo (1984) it could be expected that the main differences in approach would be:

- I students focused on the text in itself
- II students focused on what the text was about: the author's intention, the main point, the conclusion to be drawn

This difference is related to conceptions of knowledge and learning held by students; differences in conceptions which the students could begin to become conscious of as a result of their introductory activity. These differences are:

- IA students see knowledge as offering an improved understanding of reality through the abstraction of meaning

IIA     students equate knowledge with 'information' or 'facts' which are learned through memorisation

The students were asked to read the chapter, Learning from Reading (Saljo, 1984).

### 3.1.3. Activity 3

There is considerable evidence to show that while students of economics (and, of course, other subjects) can become adept at manipulating elements of economic analysis in fairly routine ways, eg the use of supply and demand analysis to explain and predict price movements, they do not necessarily understand the analysis. Dahlgrén's (1978) work on students' understanding of economic concepts has demonstrated this. In a study of students' understanding of price he asked students the simple question, "why does a bun cost 50 ore?" He used students answers to discover the conceptions of price held by students of economics. He described the main conceptions:

"A1     The price of a bun is determined by the market price of its constituents: in other words, the price depends on the supply and demand situations for eg wheat, flour and transport services.

A2     The price of a bun is determined by the supply of and demand for buns.

Example (Student 1): "If you consider this competitive model, so to speak, that's where demand and supply are in equilibrium, that point, it's a simple answer, sort of."

B1     The price of a bun is the sum of the 'value' of its constituents.

Example (Student 2): "Yes, there is a lot of stuff in it, it's the material that costs money, the wheat, flour and then to have it baked and wages...and...the costs of selling it."

B2     The price of a bun is equal to its 'value'.

Example (Student 14): "Because the producers have set a price. They have included all costs."



What distinguishes category A from category B is that the A-answers indicate the conception of price as an entity that is determined by a system (ie the relationship between supply and demand) while the B-answers imply the conception of price as a property of an object, comparable with its colour, size and weight. The latter view implies a somewhat primitive and static apprehension of a concept which is alternatively defined in terms of the function of a system."

(Dahlgren and Marton, 1978 p 34)

The intention was that activity 3 should extend students' thinking about the relationship between approach and outcomes by contextualising their thinking, in this case, in terms of the phenomenon of price. This is a key idea in economics and business and one which all the student teachers would have to learn to teach.

Activity 3 asked Dahlgren's original question of the students. They were asked to write brief answers and then to compare the answers and attempt to categorise them. They were then asked to compare their categories with Dahlgren's categories (A and B, see above) and a further question was posed: "Has a student learned anything about price if his or her conception is B?" Through this activity the which was to maintain the student teachers' focus on their conceptions of learning (see IA and IIA above).

#### 3.1.4. Activity 4

This activity took the students into school classrooms with the tutors to teach a lesson on price. The tutors attempted to design a lesson with the objective of conceptual change learning. In this context, learning experiences were sought which would move the pupils from a conception B of price to a conception A.

The tasks for the student teachers before, during and after the lesson were intended to allow them to explore pupils' conceptions and their approach to learning. The tasks were introduced to the students as follows:

Task 1            Students in pairs interview pupils to explore their responses

to the question: Why is the price of a bun, say, 50p? The interviews to be recorded.

Task 2      Observation of a lesson on price (see Figure 4.2). The observations to be recorded.

Task 3      Students in pairs interview pupils to explore their approaches to learning. Again, the interviews to be recorded. Questions to explore with the pupils with reference to the lesson on price could include:

- Tell me something you learned about price.
- Anything else?
- How did you learn it?
- If you were the one who had to decide what the pupils in your class had to learn next, what would you suggest?
- Imagine you are the teacher and you want to teach pupils in another class all you have learned about price. How would you go about that?
- Isn't there any other way?
- Why do you think the teacher planned the lesson like that?
- What do you think the teacher was looking for as an outcome of the lesson?

(Adapted from Pramling, 1988)

The lesson designed and taught by the tutors was in two parts. Part 1 comprised 5 stages. The understanding that was sought is that price is related to market structure. The strategy was to highlight the inconsistencies within and the consequences of the pupils' conceptions so that pupils would become aware of their conceptions of price and also of the relevance of, in this case, the conception of price based on market structure (Dahlgren's conception A).

Part II of the lesson (a further three stages) was created to confront the pupils with a more complex market structure (the market for new cars) than they had thought about hitherto in part I. The new context for the pupils to think



about was intended to allow the student teachers to focus on the relationship between the content and context of learning and the process and outcome of learning and see just how inseparable they are (Bowden, 1988). The tutors were keen to ensure that the student teachers were, as far as possible, aware of the process of lesson planning that they tutors had engaged in and the process of collaborative review that they would subsequently engage in with the student teachers - they were keen that the student teachers should see that the teachers (the tutors in this case) were also learners. The tutors were not interested in surface descriptions such as this was a successful/unsuccessful lesson (Part I or Part II, or Part I compared with Part II) but wanted to put evidence of outcomes (from the students' records) against intentions. The tutors were aware that:

We cannot make predictions in the strict sense in the field of educational and psychological research into learning except in the negative form (if not A then not B). We can, however, still make theoretical constructions comparing relations between conditions, perceptions and actions. The concrete meanings of these constructions must, however, once more be found out in each concrete case anew. The relation between research and practice cannot thus be predicted but surely it can be guiding.

(Marton, 1986)

It was intended that the lesson (Parts I and II) in activity 4 should not only highlight the guidance that the research on conceptions of price could provide but also emphasise the importance of seeking meaning. In this case the student teachers were seeking to understand the relationship of the activity of the lesson in school and the pupils' meanings in so far as they were able to discover these.

Activity 4 ended with a review of the lesson, drawing on the data from the records of interviews with pupils and observation of the lesson. The student teachers had worked in three groups each with a tutor so that in the final analysis there were three versions of the same lesson planned taught in three different schools and with different age groups. The diversity was thought to be important to get over the problem of school type and pupil age being seen by student teachers as dominant variables in a causal model (see Bowden, 1988). The review focused on the pupils' approaches to and outcomes of

<u>The Price Lesson - Part I</u>	
Stage I	<p>Ask pupils to write down their answers to the following questions:</p> <ul style="list-style-type: none"> <li>• Why is the price of a famous painting greater than the price of a canvas with paint?</li> <li>• Why is the price of a diamond greater than the price of a ton of coal?</li> <li>• Why is the price of an Elizabethan table greater than the price of a modern table?</li> </ul>
Stage 2	Form groups and ask the pupils to prepare group responses to the questions. Allow time for question and provision of further information if required by the pupils, such as the cost of some of the items referred to in the questions.
Stage 3	Class discussion of responses (recorded on the blackboard) with clarification and highlighting of differences between responses which favour the value/cost of production explanation (conception B) and the more elaborate market responses (conception A). Pupils to be asked to specify the difference.
Stage 4	Ask each group to produce a new example for other groups to respond to.
Stage 5	Depending on time, either group discussion plus report back or initial individual responses. (This data to be available for analysis by the student teachers in their review of the lesson with the tutors.)
<u>The Price Lesson - Part II</u>	
Stage 6	Stimulus: Car price reduction advertisement
Pupil task:	<p>Which of the two following statements labelled A and B best describes the advertisement and why? If neither is satisfactory in your opinion, write your own statement:</p> <p>A: This car used to cost £ x but we're only going to ask for £ y.</p> <p>B: We tried to sell this car for £x. It turned out, however, that that was a wrong price on the market we operate in, so now we are making an attempt to sell at the level of £y. (Adapted from Dahlgren &amp; Marton, 1978)</p> <p>Share outcomes.</p>
Stage 7	Stimulus: Letter from the Chairman of Ford Motor Company to consumers.
Pupil task:	Look at your preferred statement, does the Chairman of Ford agree with you? Say why/why not. Share outcomes
Stage 8	Stimulus: Case study of regional differences in car prices.
Pupil task:	How do you explain this? Share outcomes.

Figure 4.2. The price lesson.



learning with the demand that all statements about both should be supported by evidence.

Students were referred to studies of young people's thinking about economic phenomena. These studies included:

Pramling, I. (1988). Developing children's thinking about their own learning. *British Journal of Educational Psychology*, 58, 266-278.

Berti, A. and Bombi, A. (1988). *The Child's Construction of Economics*, Cambridge University Press.

Ross, A. *et al.* (1989). *Children's Ideas About the World of Work*, PNL Press.

Furnham, A. and Cleare, A. (1988). School children's conceptions of economics. *British Journal of Educational Psychology*.

### 3.1.5. Activity 5

Activity 5 was intended to allow student teachers to explore pupils' conceptions and their approach to learning, and the implications for their own teaching. The student teachers were taught a lesson, James & Michelle: a first economic awareness lesson (Butler and Faulkner, 1989) and asked to review it using the evidence from their own involvement focusing on what was/can be learnt by participating in such a lesson. The student teachers were then asked to prepare in groups to teach this lesson in school in collaboration with tutors. The students were given the option of running the lesson as it is described in the article (teasing out the implications for the teacher in doing this is by no means straightforward at this stage in a student teacher's programme) and they were invited to adapt or extend the lesson in ways they thought, and would judge, were appropriate. As before, the type of institution varied - middle school, secondary school, sixth-form college.

The review of the lesson included a written task on learning, drawing on the activities so far. It required the student teachers to use the following framework and the evidence drawn from the lesson on 'Price' and/or 'James

and Michelle' to write about their view of learning. It was emphasised that the evidence used should be qualified and its status established.

- What was the approach used in terms of:
  - economics content
  - teachers' intentions
  - activities/stimulus
  - organisation
  - handling pupils' responses?
- What were the outcomes?
- What was the relationship between approach and outcomes?

An edited review of one student's response to this task is included here to indicate what this task could mean for student teachers at this stage in the programme.

Extracts from Emma's response to the task on learning:

*"I shall attempt to consider two different, but largely interconnected, issues. Firstly, I must ask what it is to learn, and then I shall go on to consider how people learn. I shall answer these questions by reference to a 'James and Michelle' lesson.*

*The first question can be answered by examining the way in which we think the word 'learn' is generally applicable. I want to suggest that there are two separate levels to learning. The first level involves being able to conceive things in a certain way; in the James and Michelle lesson you may learn the facts that James is better off in some ways and Michelle in others, and that notions such as better off are relative. But to really learn from the lesson, you have to see that this really is the case (the mere fact that James is better off in some ways and Michelle in others is absolutely useless). Yet, conceiving anything at all involves abstracting from reality, because it involves asking yourself how to choose the relevant information in a situation and how to model it. Thus, a second level of learning is introduced; that of knowing when to apply a certain mode of abstraction. This involves seeing that relativity of lifestyles can be applicable intraculturally as well as interculturally and it also involves seeing that you shouldn't always abstract in this way. "Oh well, lifestyle's relative" is not*



*an applicable response to images of drought or famine on the television; in this case, a more sophisticated model of the situation is required. It may be suggested that you don't really understand a model unless you know when to apply it, thus reducing the two levels to one, but I think that it is more useful to break it down into two steps to see more clearly what the job of a teacher involves. So, we must teach something in a specific context and then help people to see how this can be extended to other situations. Later on in the essay, I will try to explain why I think that this distinction is important in terms of the James and Michelle lesson.*

### *The Outcomes*

*One of the most difficult jobs that a teacher has to do is to assess the outcome of a lesson which they have just taught. They must try and objectively consider what, if anything, the child has learnt from the lesson, on both of the two levels.*

*By the end of the standard James and Michelle lesson, some of the children were saying that James and Michelle were better off in different ways and some were saying that James was better off. None of the four children in my group thought that Michelle was the better off at the end of the lesson. They had definitely changed their minds in quite a dramatic fashion- e.g. at the beginning one of the five things that had struck them about the picture of James was "old clothes", whereas by the end they said that one of the good points about James's life was that "they had nice clothes". I asked them what they had thought about the video, and they said that they had been surprised by James' life, because it had been alright. So, two of them had decided that James was better off - i.e. they hadn't learnt that ordering standard of living is a problematic and relative thing to do, they seemed instead to think that their original ordering was incorrect.*

*And what about the two children who thought that they were better off in different ways? They had learnt the lesson in the first way outlined in the introduction, but we don't really have any evidence for saying that they learnt it on the second level. We didn't ask them to apply this way of looking at things to a different context, so who can say how they'd have reacted?*

### *The Relationship between Approach and Outcomes*



*How were the children enabled to learn and what prevented them from learning?  
What could we discard from the lesson and what should we have put in to assist the pupils' learning process?*

*The first thing to say is that it is very difficult to investigate this since, as pointed out above, we don't really know what the actual outcome of the lesson was. It is very difficult to consider how we should have conducted the lesson when we've little idea of how successful the lesson really was. Moreover, doing the lesson on a different set of pupils may have resulted in a great deal more learning or a great deal less. But there are comparisons that we can draw; we can look at the approaches that the other I of E groups used and see how that affected their outcomes, and we can assess the success of the lesson as detailed on the photocopied article that we were given, and we can quite simply consider the internal logic of our approach.*

*Linda's group used an approach very similar to the one outlined above; the major differences being that they did not have a second section to follow on from the standard James and Michelle lesson, and also that they introduced voting into the proceedings (just after the second picture had been produced and at the end of the lesson). Their voting showed the number of 9 year olds saying that neither was better off had risen dramatically during the lesson. Once again, we can see that the approach used was a satisfactory, but not entirely successful, method of getting the children to see that James' life was not as bad as they originally thought that it was, but once again we are devoid of evidence which suggests that the children could apply this approach to a different context. So, it is hard to say what they had really learnt.*

*Paul's group on the other hand were given a markedly different task. After the video, they were asked to write down good and bad things about the life of either James or Michelle, and then were asked to choose 5 things that are important aspects of judging standards of living. So, this lesson seems to have a slightly different message to the one that we tackled - i.e. the difficulty of comparison rather than the notion of incomparability. On the other hand, the task may have helped them to apply the lesson to a different context - as they were being asked to give answers with general applicability (varying from ethereal concepts such as happiness to things necessary to support life at all such as a good water supply).*

*It may be suggested that the pupils could have learnt more from the lesson by tying it off with an explanation of what the lesson had all been about. However, I think that this sits uneasily with the concept of learning that I outlined at the start of this essay.*



*Either the children had come to see the lifestyles of James and Michelle in a relative fashion or they hadn't, and I fail to see what would be achieved by simply telling them to see lifestyle in the former way. How could those who hadn't understood the lesson make sense of such an injunction? However, it is possible that further learning could be promoted by how the lesson is pulled together, and we should have thought more carefully about how this could have been achieved.*

*A second major point to make is that some of the lesson time was not used in a very productive way, and I think it follows that a more productive use of that time would have promoted learning. So, we should not have thrown the class discussions so wide open or wasted so much time in reading out pupils' responses. Instead, all responses could have been written up onto a blackboard and the teacher could have explicitly explored the contrasts and similarities. But perhaps we can stand back from these specifics and look at the approach and the outcomes in a more general way. By these I mean that we can see the approach as finding out what the children's original beliefs are, and then getting them to appraise their original beliefs by comparing them with what each other think, and also by examining them in the light of different situations.*

*Where does this leave phenomenography?*

*In this essay, I have not tried to 'prove' the correctness of any particular approach to learning. Instead, I have attempted to view learning in a particular way and tried to make sense of the lesson in those terms. My approach has not been exactly phenomenographical because I started off by arguing that there were 2 levels of learning, and I think this helps us to see why the children could deal with the first part of the lesson, but tried once again to jump to conclusions in the second half. But I do think that these lessons are compatible with the opinion that it's the way that you see phenomena that's important; nothing proved, but equally nothing disproved.*

*Just as the pupils have been learning about price and lifestyle, I've been learning about learning. I've gradually come to see the phenomena of pupils learning in a different way. But have I learnt it on the second level? Can I apply it to all the learning situations that I'll be faced with on TP?"*

### 3.1.6. Activity 6

In activity 6 students and tutors collaborated on a brief provided by teaching three schools/colleges. This involved helping student teachers to clarify

teaching objectives for a lesson on a particular topic in terms of a precise statement of the economic understanding to be developed in pupils, relating that statement to what we might think we know about pupils' initial understanding, and creating resources and learning experiences to allow pupils to change the focus of their thinking.

The review which followed the planning and teaching of the lessons was collaborative and sought to draw on the evidence collected from the record of the classroom teaching created by the students to evaluate the success of the learning experience in achieving the planned objectives (see aims of the programme 2.1 and 2.2).

This process of planning, teaching and review formed the basis of the work of students and tutors on Fridays during Teaching Practice when they were able to meet together. Students were encouraged to work with colleagues on collaborative planning or, by providing evidence from their own classroom work during the four days of teaching in the week, to review lessons taught.

The final moments of Module 1 (Term 1) were given over to supporting students in their planning for Teaching Practice. Three workshops were provided on the themes of data and case study material, role play and simulation, and photographic and audiovisual resources.

### 3.1.7. Activity 7

Student teachers were interviewed individually by tutors at this stage - between the period of school/Institute-based work (Activities 1 - 6) and the period of Teaching Practice (4 days per week from November 4th to the end of the term). They were asked three questions:

- Here is a list of activities (see activities 2 - 6 above). What do you think was the intention of these? Which were most important, which least?
- What is the difference between teachers and learners?
- What is the point of teaching in pairs?



### **3.2. The classrooms and learning module (Term 2) - Teaching and learning activities**

The second part of this module was designed to focus student teachers' thinking on the nature and place of economic awareness (Thomas and Hodgkinson, 1988; Hodgkinson and Thomas, 1989) as a cross-curricular theme in the National Curriculum. A one-day workshop allowed student teachers to explore the implications for teachers and, although to a lesser extent, curriculum managers. School-based activities involving collaborative planning, teaching and review of economic awareness activities followed.

#### **3.2.1. Economic awareness**

The Economic Awareness Teacher Training (EcATT) Programme based at the Institute and staffed by the PGCE Economics tutors provided a network of information about teaching and learning economic awareness. EcATT's research and development adopted and supported a curriculum strategy of teaching economic awareness (or EIU as it subsequently become known (NCC; 1990)) through the different subjects of the National Curriculum. The philosophy and practice of this interpretation has been developed in a number of publications (see, for example, Hodgkinson and Thomas, 1989; Wood, 1992; Thomas, 1994). Its clear links with the notion of critical thinking are developed in these publications.

The second part of the classrooms and learning module was organised so that groups of student teachers could collaborate with colleagues in school to prepare and teach economic awareness lessons through subjects of the National Curriculum and subsequently review the learning outcomes and the potential for further development of the theme with the subjects, with the teachers in school and the Institute tutors.

#### **3.2.2. Issues raised by the module**

This work raised many issues for student teachers. For example, general issues about teaching and learning and particular issues about collaboration and strategies for curriculum change. The intention was to set teaching and

learning activities in the broader frame of the whole curriculum. There is some evidence that it did so. The following are extracts from the student teachers' written reflection on their experiences (EcATT, 1992). These observations give an indication of the quality of the work undertaken in schools and raise important questions about the nature and importance of cross-curricular work and of the demands this work makes on new teachers.

*"It is impossible to draw together my thoughts on such an immense area as Economic Awareness into a few succinct sentences. But (maybe) I can pose for me what remain as unanswered questions:*

- \* If Economic Awareness is to be broadly defined, then how can we as trainee teachers presume to have any expertise in the area? The more broadly (and usefully) we define it, the more we pull the rug out from under our own feet.*
- \* When and how are we going to take the plank out of our own eye, given the restrictiveness of many economics syllabi?*
- \* How do we establish a common language between ourselves and other subject teachers for reviewing lessons and planning Economic Awareness lessons? I refer here to the tendency to think that economics is just to do with money, banking, prices and mortgages (and all those incomprehensible numbers at the end of the 9 o'clock news.) And, in establishing this common language, we will probably have to challenge our misconceptions of other subjects.*
- \* Why on earth isn't teaching for Economic Awareness a statutory entitlement?"*

*"In practice, the links between Economic Awareness and the National Curriculum subjects remain tenuous. Without doubt, mathematical, scientific, geographical, historical and language skills all make a contribution to Economic Awareness but I am not yet convinced that Economic Awareness can make a valid and positive contribution to learning in these subject areas. To be honest, I am not even certain about whether it is meant to. But to be able to convince an English teacher or an art teacher to let me into their classroom to teach their subject needs more than merely to say that it will enhance their pupils' Economic Awareness. If it is to be effective, teachers of all subject areas need to be aware and sure of its validity and applicability."*



*"Many of the issues which were raised in considering Economic Awareness across the curriculum in general and within history in particular emerged from the planning, teaching and reviewing of one lesson. In the planning, we encountered the problem of not being familiar with the syllabus or the specific area being covered by the GCSE group. We were not aware of the materials or the style of teaching and learning which the students were used to. We wanted to employ role-playing techniques whilst not wishing to reinforce views or stereotypes or divide the issue artificially or oversimplify it. Whilst we wished to discuss the issues in general terms, and discover what perceptions students initially had, the students themselves related the discussion to the work they had been doing in a previous lesson.*

*The review process was made more difficult because our aims had become blurred. Were we providing an economic context in order to clarify the historical one, or were we providing students with economics concepts and using the history to contextualise this? The question about who was the best person to provide Economic Awareness across the curriculum arose. Should it be the role of the economics teacher in a school to assist other teachers in delivering Economic Awareness within their own subject? Or is it the specialist teacher who should identify where Economic Awareness helps? Or both?*

*Providing Economic Awareness in schools should give teachers the opportunity to introduce real world examples into their classroom work - both to enhance the teaching of their own subject and to provide students with experiences which will help them to develop their critical, evaluative and comparative skills. Interesting and varied methods of teaching can be developed in collaboration to provide active and differentiated learning situations. This relies on a view of learning/teaching as being about students using their own prior knowledge to see contradictions and complexities in their views as well as seeing understanding as being more than simply gathering knowledge."*

Groups of student teachers described their classroom work in subjects. Extracts from their review of work in English, Geography and History gives further insight into how the intentions of the PGCE programme were translated into practice because they show the extent to which (and how) student teachers were drawing on evidence from the classroom to review learning for meaning.

- English

This group encouraged pupils to explore the nature of the economic system through their work on the novel 'Roll of Thunder, Hear My Cry'. They described their work as follows:

*"The aim of the lesson was to give the pupils greater insight into [the characters] by helping them to understand the discriminatory economic system which operated in the USA in the 1930s. We hoped to help them see the the economic system was self-sustaining. In particular, we hoped to highlight their understanding of the difficulties of acting when in an economically disadvantaged position... Looking at the pupils' responses [they] came to see ...that it is difficult to do anything when one is disadvantaged but this view of oppression was the main intention of the novel. [In the light of the lesson review] it would have been more appropriate for us to aim to get the pupils to question this proposition and compare it to other views, eg the views that all forms of racism are reducible to capitalist oppression, that racial oppression is sustained by historical legacy rather than actual conspiracy and so on. Were we to plan this lesson again, we would have to do considerable research and thinking ourselves on the issue... we would find it hard as economics teachers to think this through, although theories such as signalling and the segregated labour market give us a basis for planning. How is the English teacher who encounters this kind of issue in the novel...to respond?"*

- Geography

This group of students explored what was for them a familiar topic of population for a new perspective on pupils' learning. This is best described in their own words.

*"Our aim in the first lesson was to get pupils to explore the reasons a family might have for moving to Milton Keynes... we used stimulus materials provided ny the Milton Keynes Development Corporation. These were to be used by the pupils to support their arguments. We hoped they would question the validity of the materials and request less biased information... Following the the presentations we asked the groups to clasify arguments into push and pull factors and we attempted to show that a variety of perspectives had been represented: economic, social, environmental and personal... In our second lesson, we played a tape of characters in Milton Keynes*



*showing first the type of people who had done well out of the place and then those who disliked it... The tape was a success. It seemed to throw the pupils into life in Milton Keynes and give some insights into the problems with an 'everything and everybody' approach to town planning. The task revealed stereotypes of each age group which, to some extent, we should have anticipated... By using the tape as a counter stimulus to the glossy brochures we could have drawn out reasons why people would believe 'the hype' and why none of the class did..."*

- History

This group used the opportunity of working with pupils studying industrialisation in the old Soviet Union to allow the pupils to explore the criteria they were using to give meaning to the term 'industrialisation'. They were surprised by the outcomes.

*"The students were divided into four groups [and provided with source material]... Two of these groups were asked to consider the positive effects of industrialisation and two the negative effects... The for/against split between the groups was very useful in raising many interesting points about the effects of industrialisation and stimulating lively discussion but it may have narrowed the discussion by creating a competitive environment and contributing to the atmosphere in which there is perceived to be a 'right' and a 'wrong' answer to questions rather than a range of views which should be critically evaluated... To achieve the two aims of looking at the phenomenon of industrialisation...and challenging the value of pieces of 'evidence', more classroom time was needed to tackle both issues, to rationalise choice and to share this with other members of the class... The discussions were more...in-depth than we predicted. Touching on...questions such as: Can economies be planned? How should resources be used? How objective are data on the economic system?"*

At the beginning of the second period of teaching practice (5 days per week) in school, the student teachers were interviewed by the tutors for a third time. On this occasion they were asked:

- Using an example from your teaching practice, or some other teaching episode, explain what your view of learning is.
- Working in pairs, how was it?

In exploring their responses to both questions it was possible to follow up with questions about their changing views. The data collected from these interviews framed the whole set on which the analysis of changing conceptions was based.

### **3.3. The curriculum assignment module**

The assignment was a vehicle for students to pull together the evidence they had gathered throughout the first two terms of the course and to use it to comment on their own development, that is the development in their views of teaching and learning. In many cases student teachers chose to use a scheme of work taught during the second period of teaching practice as the focus for the writing. The way in which they researched this work and the comparison of their review with their initial view of teaching and learning allowed the students and their tutors to assess the development of professional competence.

### **3.4. The Term 3 modules**

There were four of these in the programme reported here.

#### **3.4.1. Developments in the 16-19 curriculum**

The intention of this module was to consider how changes for post-16 education in train at that time would improve the quality of economics and business education in the 16-19 curriculum. The key changes identified were the introduction of a GNVQ and the proposed curriculum development of the Economics Education 16-19 Project (EBEA, 1995).

#### **3.4.2. Work experience and economics**

The intention of this module was to consider what is necessary to make pupils' work experience organised as part of the curriculum useful in the teaching of economics and business. It was prepared on the assumption that careful preparation and debriefing are crucial to pupils with the opportunity to learn from their experiences of the workplace. For example, coursework in



English may provide an appropriate vehicle to help pupils to reflect on and establish meaning from their experiences. The student teachers were given a consultancy role to be present in school/college to participate in preparation, to make visits to pupils on work experience, and to plan and debrief the activities.

#### 3.4.3. Assessment

Using a marking workshop, the intention of this module was to identify and practice means by which teachers can obtain high quality information about student performances. The student teachers' attention was focused on describing the understanding to be assessed by comparing qualitatively different understandings present in pupils' performances in essays, and coursework.

#### 3.4.4. Business education

The intention of this module was to consider the implications for economics teachers of developments in business education and current proposals for courses combining elements of economics, business studies and other areas of the curriculum, such as Design and Technology.

Towards the end of Term 3, student teachers were invited to collaborate on planning, teaching and reviewing a lesson, the whole process to be observed and recorded by their tutors (working in pairs) to demonstrate their views of learning and teaching. Some student teachers accepted the invitation and the process was recorded. All the students were interviewed and/or taught the 'evaluation' lesson. At interview the questions (adapted from Pramling, 1988) asked were:

- After a year on the course, tell me something that you have learnt.
- If you had to decide what student teachers on the course would have to learn next, what would it be?
- If you had to teach another group what you have learnt, how would you go about it?
- What does it mean to learn economics?
- What does it mean to learn to teach economics?

## Chapter Five

### Results of the study I

#### 1. Conceptions of teaching economics

Study of the transcripts of the interviews with the student teachers revealed three main conceptions of teaching. Following Marton's distinction between conceptions and categories of description<sup>1</sup> (see Beaty *et al*, 1990), what is presented here is the researcher's attempt to formalise his understanding of the conceptions by describing them.

In analysing the data the conceptual tools of phenomenography have been used (Marton, 1988). The conceptions are described in terms of the approach to teaching, or process of teaching, (the 'how' of teaching); the outcome of teaching (the 'what' of teaching) and the structural and referential aspects of the what and the how of teaching as they appear prominent for each conception. According to Marton:

"Different conceptions of a particular phenomenon usually differ both with regard to how the phenomenon and its component parts are delineated and related to each other (the structural aspect) and with regard to the global meaning of the phenomenon (the referential aspect.)"

(Beaty *et al*, 1990)

Within each conception of a phenomenon a 'how' and a 'what' aspect may be discerned both having dialectically intertwined structural and referential aspects (Beaty *et al*, 1990). Figure 5.1 which is adapted from a similar figure



used by Marton (1988) to explain this point is intended to clarify this relationship. As the approach to understanding teaching economics has (at the extremes) the structural aspect of passing on received knowledge or pupils' knowledge as the object of their thinking so too does the outcome of teaching have an aspect of control for communication or working pedagogically with pupils' thinking. This study shows that the outcome of teaching as control for communication (a teacher can 'manage a class') tends to coincide with the approach of passing on knowledge (reproduction), while the outcome of teaching as working pedagogically with pupils' thinking tends to coincide with an approach to teaching which concentrates on pupils' reflection. The referential aspects shown in Figure 5.1 are similarly related.

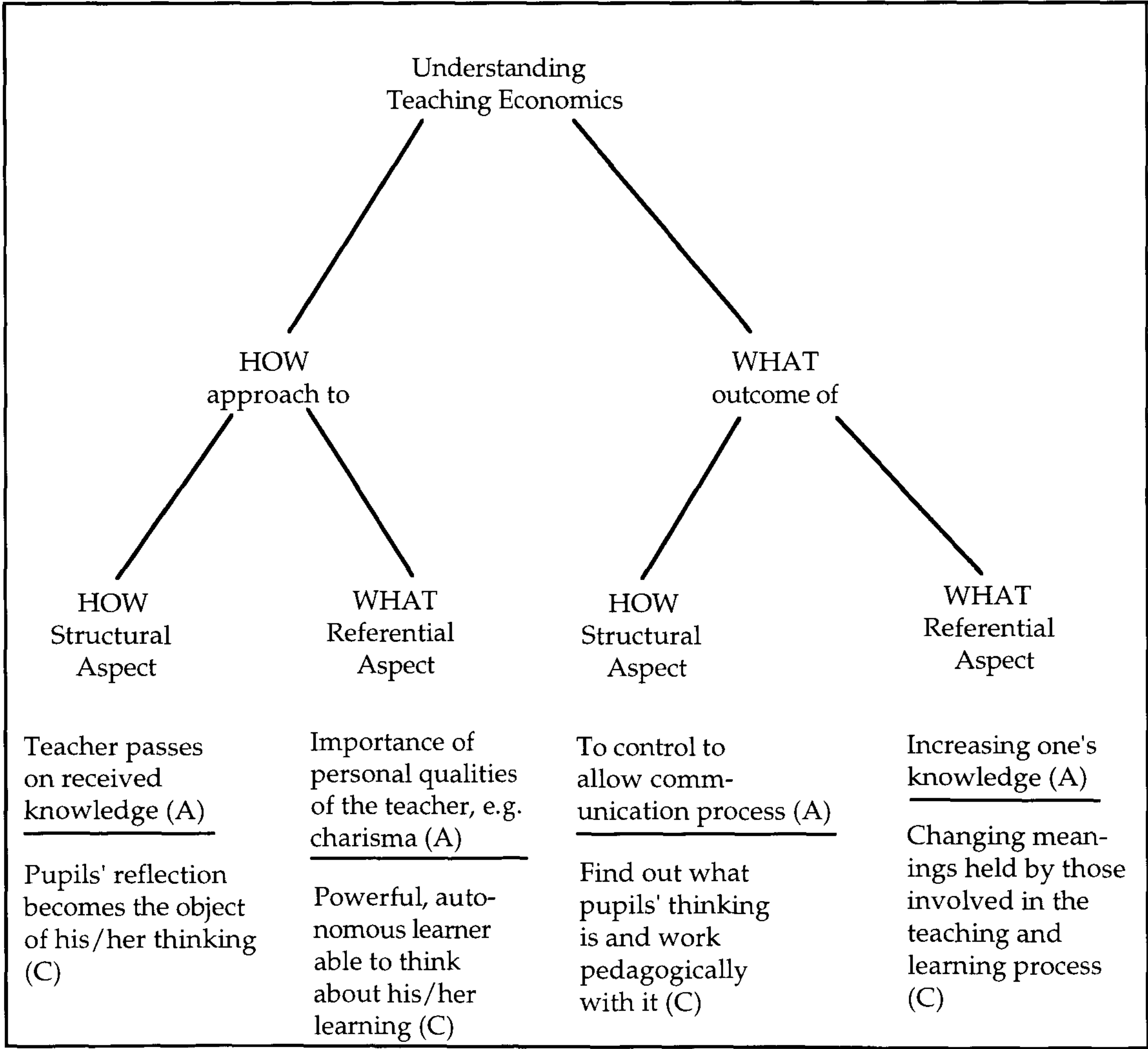


Figure 5.1. The logical structure of the categories used to describe teaching.

It has also been possible to describe the conceptions in terms of the figure-ground variation whereby different component parts of the phenomenon are focused on.

Each conception includes a view of learning as an outcome of teaching. These views relate closely to the findings of Saljo (1979), Giorgi (1986) and Pramling (1983) and others that learning is understood in five or six qualitatively different ways. For example, teaching understood as imparting knowledge to pupils, has as an outcome learning (for the student teacher and the pupil) as increasing one's knowledge.

Summarising the findings, teaching economics was understood by beginning teachers participating in this study in three main qualitatively different ways.

### **Conception A**

Teaching economics was seen as:

- Imparting knowledge to pupils

The emphasis is on the teacher as the agent of learning not the learner.

### **Conception B**

Teaching was seen as:

- Preparing pupils to use knowledge (B1)
- Providing opportunities for pupils to see the existence of different perspectives on a phenomenon (B2)

B1 focuses on the learner's actual role. It emphasises pupil's active role in the interaction between the pupil and the teacher. B2 focuses on exposure of the learner to different views. It emphasises the variation in one pupil's view versus the different views of other pupils.

In both B1 and B2 the emphasis is on the acts of teaching and learning.



## Conception C

Teaching was seen as:

- Preparing pupils to be reflective (aware of their own thinking and learning, or awareness of awareness, like metacognition).

The emphasis is on the object the acts are orientated towards, ie change in the learner's view.

The essential differences between the conceptions are those of agency, acts and object.

## 2. Categories of description

The categories of description for each conception follow.

### 2.1 Conception A: Teaching as imparting knowledge to pupils

Teaching as imparting knowledge to pupils has as an outcome learning as increasing one's knowledge (the referential aspect of the 'what' of teaching). This carries all the vagueness identified by earlier researchers on learning. And in the same way it is, in its vaguest form, superordinate to all the other conceptions. The meaning of knowledge is not the focus of this conception. Rather the focus is the communication process (the structural aspect of the 'what' of teaching).

...pass on knowledge...As a signpost...(Simon Oct 91)

...you've got to transmit information in a clear and logical way...(Rehana Oct '91)

...the teacher's job principally is to impart knowledge...(John Nov '91)

...imparting information and knowledge...(Sarah Oct '91)

...you can just look at it on the surface with the teachers as givers and the pupils as receivers...(Gary Nov '91)

The knowledge or information is simply passed on in turn having been received by the teacher from his/her teachers (the structural aspect of the 'how' of teaching).

M: ...passing on knowledge that you know and enabling others to increase their knowledge

I: you have that knowledge already?

M: yes... (Melissa Oct '91)

...I have to go into the classroom to find out what the economics teacher talks about - and read economics textbooks... (Simon Oct '91)

...when I first thought about teaching, I was thinking of it in a very closed way - I want to teach economics the way I learned it... (Vicky Oct '91)

Control of the class for the communication and receipt of knowledge is a structural aspect of the approach to teaching (the 'how').

...the ability to communicate. I think that's one of the main things so that you can get over what you're trying to say... (Tim Oct '91)

...Could I stand in front of a blackboard and show I know economics and get any respect while I'm teaching it?... (Vicky Oct '91)

I think it would be a major problem...keeping the class's attention... (John Oct '91)



By this conception communication is not possible unless controls are placed on any behaviour on the part of pupils which does not indicate readiness to receive knowledge.

...the hardest thing, just to walk into a classroom and take control...  
to get respect from the pupils you're working with when you've got  
to transmit information in a clear and logical way... (Rehana Oct '91)

...he knew where to draw the line...could command control...  
(Kim Oct '91)

...you have to impose yourself on a class...to crack the whip...  
(John Oct '91)

Readiness implies that the pupils are waiting passively to be filled.

...most of [the pupils] are kind of empty... (Sarah Jun '92)

Essential to maintaining control is a clear indication that communication has been successful so knowledge is defined in a way that makes it demonstrable (by pupils) by being reproduceable through providing right answers to questions or memorisation and reproduction. This is associated with a view of the examination system as requiring reproduction of knowledge in a narrow sense.

...I think some of them learned from the lesson...They seemed to get down the information and were answering questions... (Harshani Nov '91)

...I haven't resolved that dispute at all. Do I dictate from Stanlake [textbook] and get a good exam result but then forget it all after the exam?...(Simon Jun '92)

This aspect of conception A contrasts with the other conceptions in which rejection of mere reproduction for examination purposes (if examinations are seen as requiring such) is a structural aspect of the 'what' of the conception.

...it just becomes this thing that's taught at AL. It's just got no meaning. It's just like this thing - a neat package, topic, whatever. You know what it looks like, not necessarily know what it means at all and why somebody has made that analysis and what's gone into making that analysis... (Matthew Feb '92)

In other conceptions this notion of reproduction is absent.

...what the curriculum is and how you can use that constructively rather than just drilling people through exams... (David Oct '91)

In this conception (A) the approach to teaching is translated into personal qualities of the teacher such as "firmness", "charisma", being "brilliant", gaining "respect", and having power whereby a good teacher is one who can "put the fear of death in you" as a learner. Being a 'good' teacher is explained in terms the way that such teachers approach the job of teaching and the way they are perceived by pupils in the classroom. It is the referential aspect of the 'how' - it is what being a teacher means. And again the distance that this puts between teacher and pupil in this conception contrasts with this aspect of the pupil-teacher relationship in the other conceptions.

...They just were charismatic people... (Simon Oct '91)

...could command control - one word from him... (Kim Oct '91)

...I didn't have the authority to actually discipline them... (Edward Oct '91)

...an air of authority... (Melissa Oct '91)

...all to do with respect...we knew he was brilliant (Vicky Oct'91)

...disciplining a class because that is not my forte at the moment... (Sarah Oct '91)

...she really put the fear of death into you...(Suzannah Oct '91)



There is a sense in which this aspect is also superordinate since a negative interpretation of these characteristics of the teacher, eg dull, or disrespected does not in any way feature in the other conceptions.

...issues such as control didn't tend to arise...he just sort of expected that one turned up to the lesson and we would want to work..."  
(Emma, Oct '91)

In summary, in terms of the figure-ground relationship of this conception, communication is figure and what is communicated (the content) is ground.

## **2.2. Conception B1: Teaching as preparing pupils to use knowledge**

In this conception the focus remains the communication process as in conception A but it is a two-way process between teacher and pupil, and not simply from teacher to pupils. Although there is a limit placed on the extent to which this communication is two-way, harking back to conception A.

...at some point you do have to stand back and say, at this point it's not two-way, at this point I'm telling you, you may not like that but...  
(Daniel Oct '91)

...ask or argue but you know you've got to have some kind of control over it all... (Vicky Oct '92)

Pupils remain an undifferentiated whole referred to in the third person plural but "they" are seen to play a role in the teaching and learning process beyond that of recipients of knowledge. The process is seen to be complicated by the acceptance that pupils do not enter the classroom as empty vessels which are to be filled with the teacher's knowledge.

...to adapt the knowledge that you have. In a sense try and extract it through the kids rather than giving it to them... (Mark Oct '91)

...Bringing things up from everyday experiences... (Kim Oct '91)

...seeing inside a child's mind quickly, being able to identify the signs

and use - identify the causes of behaviour and areas of interest of that child and areas of ability and be able to make the most of them..."  
(Daniel Oct '91)

The outcome of teaching (the 'what' of teaching) is the development of the capability to apply what is known.

...trying to apply economics or whatever you're teaching to what they understand, trying to get at their understanding of it so that you're at their level. Not teaching what they won't understand, and putting it into everyday contexts... (Daniel Oct'91)

...pupils...have to see the use of it themselves without the teacher saying this is the use of it... (Katerina Nov'91)

The approach to teaching (the 'how' of teaching) is a type of Socratic dialogue with the teacher through which the learner is encouraged to respond to an issue or problem and, through interaction with the teacher, modify that response in the course of teaching. The dialogue demonstrates the weaknesses in pupils' thinking when applied to problems or issues or an explanation of an economic phenomenon.

...someone's guiding that thinking. Not in terms of telling you what to think but asking relevant questions... (Emma Oct '91)

...you need to look at it how they would look at it and extract from them where they are at that point in knowledge terms - extract where you want them to be... (Mark Oct '91)

...They have to go through a process of trying to assimilate information and manipulate it in ways they think appropriate...the teacher has to facilitate that because most of the theories are fairly logical...you shouldn't have to do too much to get them there... (Salif Nov '91)

...try and turn it back on them and say, 'what do you think that?..  
(Daniel Feb '92)

...Engage them in conversation... (Daniel Oct '91)



...The teacher is not just giving but has to accept different ideas and from that he can organise and structure the delivery of the knowledge... (Gary Nov '91)

...You have to find a way of breaking it down. Working with kids, getting them to express their ideas, may be fumble a little bit,...that makes them verbalise and express their understanding and that makes them learn better than if they receive it... (Daniel Nov '91)

...Get them to understand and question what they're doing and may be take that understanding and use it all the time, question what they're doing all the time... (Tim Nov '91)

...it's an interactive process between the teacher and the pupil... (Patrick Nov '91)

...the dynamics of how things are going and how you can influence the course of that...to steer them to an interest and appreciation of the subject... (Salif Oct'91)

...Managing the learning process so that it goes in the direction you want without veering off in directions you don't want... (Katerina Oct '91)

A referential aspect of the 'how' of teaching is the application of the models and concepts of economics as they may have been traditionally explicated in texts, etc.

In so far as the outcome is learning as application, context is an important structural element of this conception but described as the everyday experience of the pupil.

...I don't think you can teach a student in a vacuum. They come in with their own experiences. If you're trying to teach a particular subject without trying to draw on those experiences, I don't think real learning can take place because they don't apply to any real life experiences... (Patrick Feb '92)

...when it comes down to it, you can apply it everyday in every sort of way...and you can teach it at that level...they might get more interested in it and want to learn about demand and supply, why things are a certain price...a lot more than when I did it. It was very theoretical, up on the board, reading from the supply and demand curve, but you can apply it...make it interesting in that way...  
(Daniel Oct'91)

'Real life experiences' refers to activities such as buying and selling or working for payment. According to this conception economic models are applied to the experience, not as would be the case in the constructivist tradition that meaningful economic models are developed from experience.

A structural aspect of the 'how' of this conception is the importance of developing an appropriate relationship with the pupils to allow communication of a question-and-answer format to occur successfully. The latter is seen to depend on the former.

...developing the social relationship between you and the children. Just working at how you should be pitching yourself at the same level in control terms... (Mark Oct '91)

...give them freedom to think so they can manage things...  
(Gary Oct '91)

Another structural aspect of the 'how' is the adaptation of knowledge so that it is appropriate as a stimulus for dialogue with pupils.

...organise my knowledge in a way that children can understand...  
(Gary Oct'91)

...put things across in an understandable way... (Suzannah Oct'91)

...saying interesting things... (Tim Oct'91)

...making the stuff, making the material he's teaching more interesting... (John Oct'91)



In terms of the figure-ground relationship, establishing a Socratic dialogue (confuting) is figure and what is communicated is ground.

### **2.3. Conception B2: Teaching as providing opportunities to see the existence of different perspectives on a phenomenon**

This conception shares with conception B1 the use of dialogue as stimulus. The difference is in emphasis on the teacher as a facilitator of dialogue between pupils which reveals different perspectives on a phenomenon. This is the 'how' of the conception.

The interaction - sharing of opinions in the process of argument - has thinking as an outcome of teaching. This thinking appears to be stimulated by the need to construct a defence of, or launch an attack on, another's perspective.

...having arguments in the lesson seems to make a lot of sense...  
they were really having to think about it...they were still arguing  
as they went out of the door... (Katerina Feb '92)

...get them to share ideas and actually make them think a lot more  
rather than do the thinking for them... (Rehana Feb '92)

It is possible to suggest that what the pupils think about is the meaning they give to a phenomenon. In this case the referential aspect of the outcome of teaching, in the form of pupil learning, is learning as understanding, ie in the sense of gaining meaning (Beaty *et al* 1990). The pupil articulates the meaning he/she holds and compares and contrasts it with meanings held by other pupils and the teacher.

The difficulty in describing this conception comes in deciding whether comparing and contrasting is the intention of the teaching process (an end in itself) or whether, through comparing and contrasting, the intention of the teaching process is the gaining of new meaning. If it is the former, this conception collapses to conception B1 with the pupils used as an additional source of confutation and individual learners either accepting or rejecting the knowledge implicit in the lesson content designed by the teacher. If it is the

latter, the teaching process is seen to be more complex and this conception is encapsulated in conception C. In short, this conception (B2) appears to be a mixture of conceptions B1 and C characterised by confusion over outcome. At one extreme, the approach is an end in itself to organise the classroom so that pupils exchange ideas, argue, discuss.

...make you aware that other people have different opinions and your one is not necessarily the right one even though you may still stick to it. You would be more flexible and receptive to other people's opinions and evaluate them against yours, seeing the benefits of your own view...(Simon Jun '92)

...listening to each other and arguing points... (Melissa Jun '92)

...learning off each other in groups just bouncing ideas off each other...(Katerina Nov'91)

...the teacher is the catalyst and pupils take it on from there...The teacher starts something off and hopes the others will pick it up. Then it will evolve from there...the teacher can learn from the kids. They come up with ideas which the teacher hadn't thought of... (Rehana Nov '91)

...talking to each other and collaborating with each other; discussing issues...learning from each other... (Dean Feb '92)

At the other extreme, the end - changing meaning in the sense of developing a qualitatively different conception of the phenomenon studied- is described as if it is an approach, or process. References are made to "developing ideas", recognising the "problems" associated with the existence of different perspectives, and the observation of different frames of reference , all of which can be a powerful cause of change if attention is focussed on them.

...you can bring in different ways of looking at it so that people are learning not just in terms of thinking of different parts of the syllabus but of developing ideas, working collaboratively... (David Oct '91)



...to begin to appreciate there's a perspective other than their own - that there are all sorts of value systems and perspectives and frames of reference at work and at play at the same time and these things are somethings brought together by an incident or set of circumstances and they have an influence on this thing, this outcome... (Matthew Feb'92)

...what that information means and where it comes from... (Katerina Feb'92)

...they had to debate it...some did change their viewpoints... (Nico Feb '92)

...to realise the different perspectives and the possible problems that arise because people come from different viewpoints with a topic... (Mark Feb '92)

What is distinctive about conception B2 is that the approach to, or process of, teaching (the 'how') is conflated with the outcome of teaching (the 'what') because a relationship between approach and outcome is not clearly articulated. From this it could be argued that it is not a conception of teaching at all but that would be to deny its importance as a kind of bridging conception between B1 and C held by teachers as they develop.

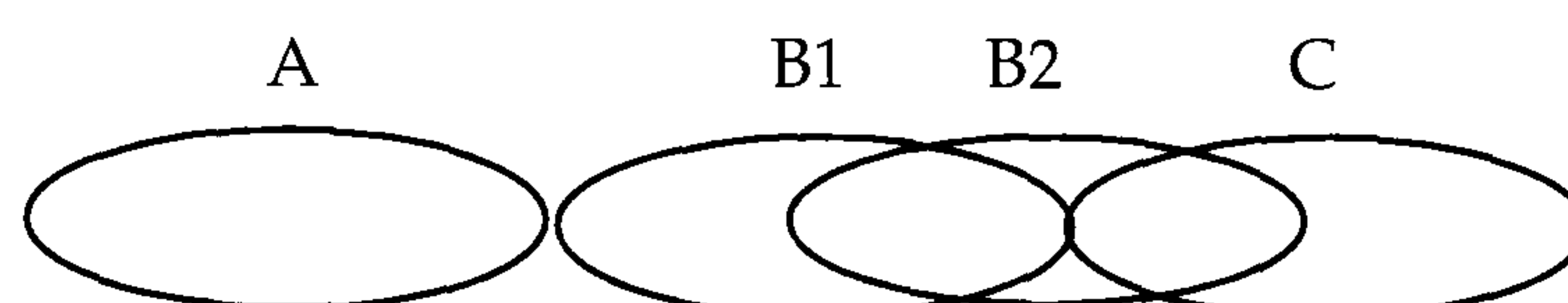


Figure 5.2. The relationship between conceptions of teaching.

The following extract from an interview with Mark (Feb '92) exemplifies this conflation of approach and outcome.

M: I think one thing that's been made clear to me is about how participation really affects learning and the lesson which springs to mind is an economic awareness lesson we did on industrial negotiation from the Trade-Offs package. We gave a set of roles out to different groups and asked them to prepare it, you know some kind of case. And when they were preparing it, I was thinking this is going to fall really flat because they weren't really interested in the task at all. They were just kind of lounging around and looking at it. And I was asking questions and they just weren't bothered. When we drew all the tables together and they actually sat down and the thing started, those who previously had been completely unwilling to get involved just kind of started. And then they were all grabbing for the sheets that they'd first been given and trying to put themselves, you know get themselves involved. And I think every, there was one lad who didn't participate but all the others participated and I really got the feeling that they hadn't done that before. It was a real, they really kind of, you could see them as they spoke struggling with their expressions and, you know, trying to make points in a professional way. And it was really wonderful to see them trying to develop those skills.

Interviewer: Is that because you thought they were learning?

M: Yeah, I think they were learning a lot about presentation.

Interviewer: Is that what you wanted at that time?

M: I think so, yeah. We wanted them to get involved in the topic and empathise with their role. So, yeah, that was our aim, I think. I'm not exactly sure how that fits into learning.

Interviewer: Did you have any intentions in terms of economics? Because



you talked about presentation and empathy which are, sort of, overarching skills.

M: Well, I think from economics, really coming to some understanding that there are different perspectives to bear on a topic. I mean they were given the different perspectives admittedly. They didn't generate those but... And some of the arguments that they had to come up with as, say, managing directors or pressure groups for certain things were overtly economic in nature, I think.

Interviewer: How did you see your role as the teacher in all that?

M: I think I was a facilitator really. I mean I just gave them the roles and I sat there and I did make comments about what they said and when everyone was talking at once I quietened them down and asked them to talk one at a time but it really was...I didn't, you know, get that involved. I did a bit of a summary at the end which is something I always like to have.

Interviewer: Were you looking for an outcome? And did you get it?

M: Yeah. I think I was looking for them to realise the different perspectives and the possible problems that arise because people from from different viewpoints into a topic. And possibly how you can move on from a position of deadlock. In that particular case the management just kind of said, 'Oh, we're just not going to do anything' and there was some kind of deadlock. So from there we had to kind of move on. And they all had to re-examine how they could compromise.

In Mark's lesson, the approach is the outcome, ie compromise.

In summary, this conception is similar to conception B1 in that teaching is seen as a dialogue within a framework structured by the teacher with outcomes associated with this structure. Through the discussion pupils come to see the existence of different perspectives on a phenomenon. In order to teach the teacher needs to know and respect pupils' different points of view

and needs to know how to facilitate pupils' assimilation and accommodation of others' viewpoints. The teacher acts as neutral chair (see Stenhouse 1971). These are the structural aspects of the approach to teaching. The focus of attention is the identification of different meanings held by pupils and teacher. The actual outcome of teaching in terms of pupil learning is unclear - pupils may tenaciously hold onto preconceptions while appearing to compromise or they may change the meaning they have - because the focus of attention is translated into a process whereby pupils are presented with different perspectives.

In terms of the figure-ground variation, exchange of perspectives is figure, changing one's own meaning is ground.

#### **2.4. Conception C: Teaching as preparing pupils to be reflective**

By reflection is meant the learner's awareness of his or her own learning, or awareness of awareness, as in metacognition.<sup>2</sup>

...I've been thinking about how I've learnt about learning so I can kind of learn about learning on two levels: one by observing other people; one by just thinking about how I'm doing it... (Emma Nov'91)

...I can stand back from how I am learning...and think, oh yes, I know what's going on in my mind now... (Rod Jun'92)

The outcome of teaching (the 'what') of this conception is learning as seeing something in a different way. The referential aspect of the 'what' of this conception is changing meanings held by those involved in the teaching and learning process.

...it was an attempt to change the way the kids were looking at things... (Matthew Nov'91)

...must appreciate that difference has occurred and why it has occurred ... (Rod Jun'92)



...really brought home to me how difficult it is to change people's conceptions... (Emma Nov'91)

...giving you the power to think beyond that framework...criticise the whole set of things and look outside that...a critical thinking thing... (Mark Jun'92)

...to be able to take a critical stance...to be able to stand back and examine it and think, who said that and why have they said that and what does it mean?... (Matthew Jun'92)

The approach to teaching (the 'how') is to work with content metacognitively through the teacher focussing on the learner's reflection about that content. In other words, to organise the classroom experiences of the pupils so that the thinking of the pupils about the content of the lesson is made an object of the pupils' thinking. The referential aspect of the 'how' of this conception is a more powerful thinker, and an autonomous learner, able to think about his/her learning.

...establish a dialogue or a background to interpreting those experiences...a dialogue in your mind...(Emma Oct'91)

...pupils are given the opportunity of interpreting their understanding rather than just relating it to very structured knowledge...(Gary Feb'92)

...it's good to teach a group to be introspective...(Emma Nov'91)

Such approaches have been described and exemplified at all levels of the education system . An example drawn from this research extracted from an interview transcript illustrates the approach.

E: I was looking at the law and employment. The lesson was an adaptation of something I did with the fourth years...What I'd basically done was handed out some thing on cases of racism. Then basically asked the question, what was going on? And they started to tell me and then I said does the Government ever have the right to tell a business what to do? Or to tell a business person what to do? They went, no, no, no. And then what I

tried to do from that was I tried to get them to see the implications of what they said they believed - that the Government could never do it. And all that we did was investigated the implications of that view - what it would mean in practice. By doing that I think they came to see more clearly what that view actually entailed. I think there was a knee-jerk reaction first of all. Then they all moved away from it because they didn't want to be associated with that kind of thing because they had come to see the implications. Then that caused them to shift their view as to what the Government was entitled to do. Generally, I think learning is to do with getting someone to see their viewpoint more fully for what it is. Getting them to see the implications of something or getting them to seeing the assumptions upon which something is based. I think once they see that they may learn to stay with that viewpoint. I think they come to understand that viewpoint in a fuller sense so in that sense I think they've learnt.

Interviewer: Right. I understand. Just to go back for a minute, and say where they were and where you think they got to. Give me the context.

E: In the context?

Interviewer: Yeah, just contrast them - where they were and where they got to.

E: Where they were is I think they thought profit/business ruled absolutely. And I think also they thought that was the answer they should give in their Economics lesson. I don't know how true it is to say that's necessarily what they really always believed. That was certainly the answer they thought would sound really good, and I'd say, well done, and give them a pat on the head - it's all to do with profit. And I think that the way that they changed their minds so they came to see there were certain implications to thinking that, that meant you couldn't interfere with things that we might think were morally



unacceptable, you know racism, etc. So I think they came to see all these implications of that. I can't then say for sure.

Interviewer: For example?

E: For example, they were unhappy with the idea that an employer could choose not to employ someone simply because of their race. They were unhappy with saying that the Government should sit back and not do anything about that. How they then balanced those two things up, I think in that lesson they balanced them up and said, oh no, that the Government is entitled to interfere, but I don't think that conclusion is necessarily where the learning took place. I think learning took place in seeing that there was more than one aspect to that and there were things that had to be weighed up and balanced against each other. (my emphasis)

The structural aspect of the approach to, or process of, teaching involves the pupil's reflection and (probably results from) some kind of prolepsis as a sophisticated rhetorical device built into the teaching and learning experience so that a pupil's reflection becomes the object of his or her thinking as in Emma's description of her lesson. In the example cited here, it is the view that the Government should not intervene confronted by a moral dilemma resulting from that thinking which is the object of the teacher's intervention.

Teaching in this way involves a willingness on the part of the teacher to discover what and how others think about content in order to give it meaning and to work pedagogically with that thinking (the structural aspect of the 'what' of teaching). In terms of the figure-ground variation, it is the focus of attention on the changing meanings of both the pupils and the teacher which is figure and the content of thinking which is ground. According to this conception, the teacher is also a learner.

...you can't be a teacher unless you're also a learner, unless you're willing to learn about what other people are thinking, how other people see the world, and willing to address that...(Emma Nov'91)

...you constantly have to re-evaluate where you are and what kids are saying - adjust your position...(Mark Nov'91)

...you're continuously learning but you're never going to reach a point whereby you think, I've done this...(Matthew Jun'92)

...I feel like I'm in cognitive conflict...(Mark Jun'92)

The decisive difference between conception B2 and conception C lies in whether the 'argument' or dialogue, that is part of the teaching and learning process, is to be internalised in some deep sense by the learner leading to the construction of new meaning by the learner, or is merely to be seen as an exchange of opinions to be accepted or rejected. The outcome in conception B2, as it has been described, can be compromise based on the combination of perspectives for the creation of, or the development of defensive strategies for maintaining, a personal publically-stated perspective. In conception C the outcome is the development of new meaning in the sense of changing the learner's view of the phenomenon studied through reflection on both the origin and nature of existing conceptions held. Since the teacher is seen as a learner in conception C, the process of teaching and learning involves the teacher in reflection and thinking about reflection also - a version of the reflective practitioner.



## Chapter Six

### Results of the study II

#### Some quantitative results

The views expressed by the student teachers in the interviews can be classified. As the same student teacher may express different conceptions in the same interview, a rule for handling this problem could be introduced. There are two options (Beatty *et al*, 1990). The conceptions expressed by each student could be recorded (as they are here) or, if the conceptions form a hierarchy, it is possible to link conceptions with student teachers and occasions by the use of a priority rule ie, for each student record the 'highest' conception expressed on each occasion (shown in bold type here in Table 6.1).

Why was the programme more successful with some student teachers than others? In terms of the criteria sought by conventional studies of learning-to-teach, it would be relevant that the student teachers' starting points differed with respect to academic achievement, their experience of education, their biographies, eg their experience of their own teachers and their own relatives who were teachers, and their conceptions of learning. Their experience of teaching practice differed while on the programme, for example some 'sat with Nellie' (Stones, 1989) while some engaged in collaborative review. Their subject supervisors and tutors differed also. However, this study was not intended to be a study of the functional relationships involved in learning to teach. It began with the assumption that learning is relational, as phenomenography assumes, so the outcome of learning will depend on the relationship of the individual to the world. It is for this reason that we must turn to the case studies for illumination of the reasons for the difference in

outcome for the student teachers bearing in mind that the outcome space was generated by the different ways of seeing teaching economics present in this group of student teachers.

Table 6.1: Some quantitative results of the study.

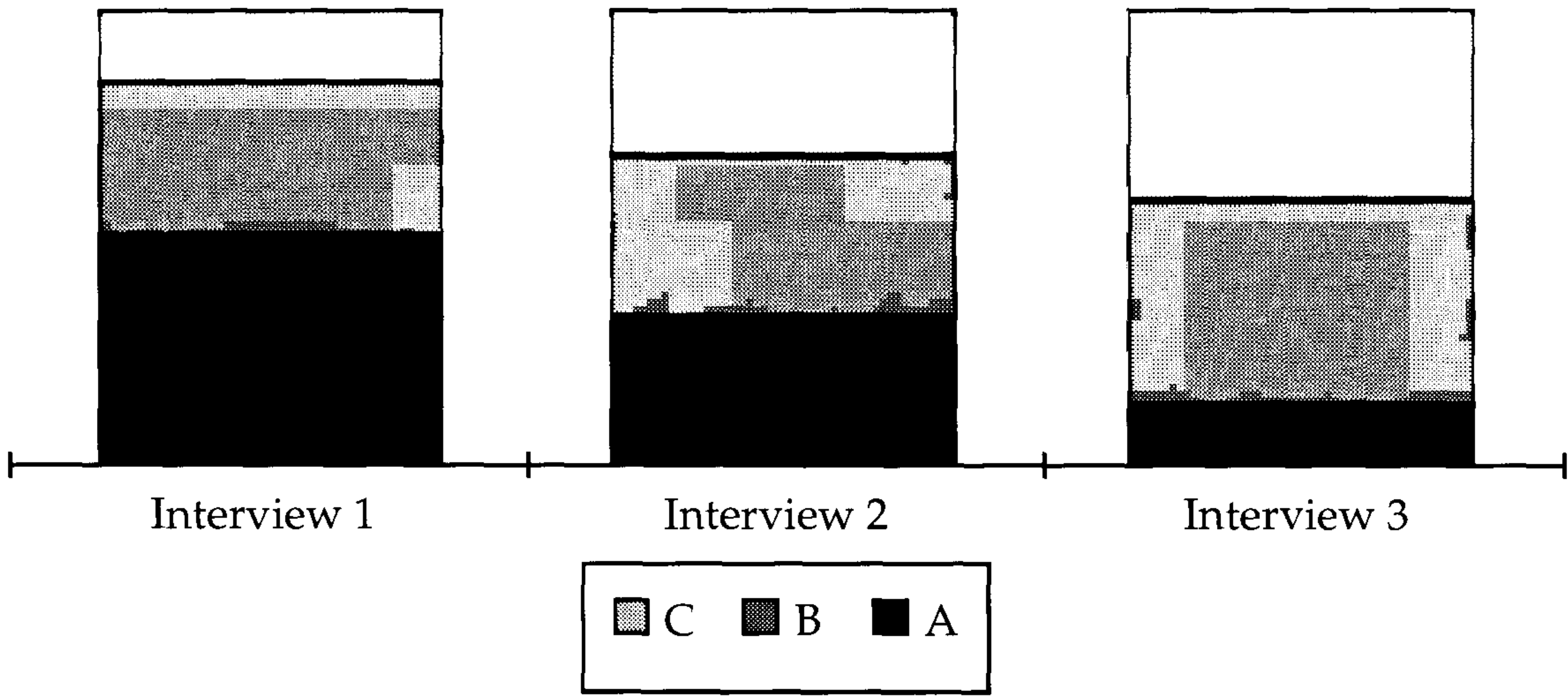
Student teacher	At the start of programme	After the first 5 weeks	Before the second TP	At the end of programme
Mark	A,B	B,C	B,C	C
Simon	A	A,B	B	B
Salif	A,B,C	B	C	na
Kim	A	A	B	na
Matthew	B	C	C	C
Melissa	A	A,B	A,B	A,B
Rehana	A	B	A/B/C	na
Vicky	A/C	A	A/B	A/B/C
Gary	A/B	B	A/C	na
Emma	C	C	C	na
John	B	A/B/C	na	A
Edward	A	A/C	na	na
Martin	A/B	A/B	B	na
Sarah	A	A	A	A
Rod	A/B	A	A/B	C
Sarah	A	A/B	B	na
Rebecca	A	na	A/B	na
Gillian	A	A	B	B
Jocelyn	A	A	A	na
Harshani	A	A	B	na
David	A/B	-	C	na
Patrick	A/C	C	A	na
Nico	A	A	B/C	na
Suzannah	B	B	-	na
Daniel	A	A/B/C	C	A/B/C
Tim	B	C	C	na
Dean	-	B	B	B

Strictly speaking, the outcome space for the conceptions is represented by the conceptions A, B and C - there are three ways of seeing teaching economics - but the Chart 6.1 which represents the changing proportion of student teachers holding those conceptions throughout the year of the study reveals something about the composition of the outcome space in quantitative terms



which is of interest and may be of importance. Looked at in this way it seems that whilst there is a reduction in the number of student teachers holding conception A of teaching and an increase in those holding conception C, conception B is a resilient and growing category.

Chart 6.1. Outcome Space



## **Chapter Seven**

### **Results of the study III**

#### **1. Qualitative results**

The Economics PGCE Programme set out to challenge student teachers' views about teaching economics. There is some evidence shown in the table that for some student teachers the programme may have been successful in doing this, although it is possible that the learning represented by the changes in conceptions shown in Table 6.1 and Chart 6.1 could have occurred for other reasons. For example, the periods of Teaching Practice (1 and 2) were not common, except where student teachers were placed in pairs, and then only common to those pairs. The interviews themselves were opportunities for learning as they were intended to make the student teachers reflect so as to reveal their awareness of teaching economics. For these reasons it would be unwise to rely only on quantitative results. Qualitative results are, therefore, provided to support and extend the quantitative results.

Case studies are used to illuminate certain aspects of the conceptions and the possible effects of the learning tasks and interventions of the programme including the interviews on the conceptions of student teachers enrolled on the programme. They also identify opportunities for re-focusing the student teachers' attention and suggest reasons for this and suggest changes both to the programme and the ways the tutors intervened in their teaching of the student teachers. In this sense the case studies are the most valuable results of the study.



The interviews provided a deep yet fathomable pool of meanings for teaching held by the student teachers. In analysing the meanings it was possible to reflect on the skill needed to conduct phenomenographic interviews. Not all of the interviews disclosed as much as the analyst would have liked but the majority did. The few shortcomings in the interviews were varied in nature and source. Some interviews were longer than others. In a few cases the interviewee was not very forthcoming and the interviewer found it difficult to probe the meaning because so little was offered in response to the open questions of the interview. In a few cases the interviewer did not follow up statements made in enough depth to allow confident allocation of aspects of the transcript to a particular category of description. It became clear in the analysis that in a small number of cases the interviewer could not have made the connections that it was possible to make in the cold light of a reading of the transcript and was therefore not in a position to probe the meaning more deeply at the time of the interview. In a very few cases the interviewer lost the thread of the interview by asking leading questions or making summative statements.

Twenty seven case studies follow illuminating the ways in which the student teachers experienced teaching during the programme and indentifying the development of their understanding, or awareness, of teaching.

## **2. Case studies**

### **2.1. Mark**

#### **2.1.1. At the start of the programme**

Mark's parents were teachers and he had had some experience of teaching at a university prior to the pre-service year. This biographical detail may in itself have had an impact on his beliefs about teaching. He had had the opportunity to see for himself that preparation for the classroom requires thought and action on the part of the teacher. This is a potentially powerful

experience unavailable to those whose only experience of teaching is being taught - who see the outcome devoid of the preparation process.

Mark's description of a good teacher was of a man who, although "set in his ways", "paid attention to us and focused on what we were saying". He also described this as "openness". This teacher wanted "to accept our ideas and hear them and question them". Mark started the teacher education programme with a belief that he could do just that also. His main concern was developing "an idea about what children need in terms of discipline and boundaries". He wanted to become "more practised at exercising my power". And he had a question: "What is my relationship with children?"

So it could be said that Mark started the year with the classroom control issue as a major concern. His two weeks' preliminary experience observing a primary school teacher had made an impact on him. He claimed to have seen a teacher exercising control over pupils' behaviour without jeopardising her relationship with the pupils. He was impressed. He described it as "a wonderful thing".

He felt able to say that learning to be a teacher involves "two aspects":

"...one of them is learning how to adapt to the knowledge that you have. In a sense try and extract it through the kids rather than giving it to them. It's a subject based thing in a sense...working with economics in that respect. But on the other side is developing the social relationships between you and the children. Just working at how you should be pitching yourself at the same level in control terms".

Mark's attention was focused on himself as the agent of teaching - needing to discipline and control - but also on the act of teaching - the role of the learner - "...extract it through the kids rather than giving it to them..." This second focus has been found to be absent from some teachers' thinking with the act of "giving it to them" unconsciously overwhelmed by the narrow focus on the teacher as the agent of learning.

There is a sense in which Mark seemed prepared at the outset of the course to sharpen his focus of thinking on the teaching and learning of subject matter - on the acts of teaching.



“...it’s easy to study economics, to know economics and think in an economic way, but getting other people to do that is a wholly different thing. Learning strikes me you do it in your own personal way and it doesn’t involve anyone else whereas getting someone else to learn the issues involves something far more than your own knowledge and your own way of looking at it. You need to look at it how they would look at it and extract from them where they are at that point - in knowledge terms - extract where you want them to be, but I’m not sure how that’s approached in economics...”

Mark showed by this statement that he was willing to engage in thinking about pupil learning at the outset of the course. There appears to be a contradiction in what he said - learning does not involve anyone else; you can get someone else to learn - the resolution of which could have become a learning experience for Mark. He placed also great emphasis on discovering pupils’ prior learning which was another potential source of learning for Mark. It is just possible that Mark was making a distinction between economic knowledge and understanding of economic issues but the tutor interviewing Mark did not probe this thinking further.

Mark, at the outset of the course, was of the opinion that what he described as “interaction seems to be a very complex and intricate and huge thing for a child to go through”.

There was evidence that the assessment system figured in Mark’s thinking about his job as a teacher.

“...my job is to try and get pupils to think in economic terms and try to get people to deal with economic issues and, specifically, to the extent of able being to pass exam questions...”

Collaboration with other student teachers and teachers and HE tutors needed, in Mark’s opinion, to be based on a close, friendly relationship to provide support when dealing with “emotional things” related to working with pupils.

In conclusion, it is clear that Mark embarked on the course with elements of both conceptions A and B represented in his thinking about teaching. It is

also clear that opportunities for developing his thinking had been present in this first interview.

#### 2.1.2. After the first 5 weeks

The questions that must be addressed in evaluating the programme at each point are: what did Mark learn as a result of his involvement with the course and how could that learning have been possible? In short, what was the effect of the learning experiences provided by the programme on Mark's learning?

In the second interview Mark was asked about the intention of the activities of the first 5 weeks of the course. His opening reply was perhaps encouraging: "you were trying to bring about a way of thinking in us which we are not used to". It was certainly the intention of the course tutors to achieve this but the question remained, what did Mark mean by this? He referred to some of the activities in turn.

"...the conditioning exercise was to see how different people would tackle the learning process from a piece of writing - how some people see through the actual content of the writing to have another understanding of the meaning...

...interviewing pupils before and after lessons, presumably it gave some idea of what we've actually learned at the end of the day...

...the Price and James and Michelle lessons seemed to me to be a test of the whole idea of the phenomenological approach and the jury's still out for me on that one..."

These responses could also be seen as encouraging. The tutors did want the student teachers to see that different understandings could exist, did want the pre- and post-lesson interviews to focus attention on pupils' learning and had used the 'Price' and 'James and Michelle' lessons because they were borne out of the phenomenographic perspective on teaching and learning. So far so good although it would be wrong to infer too much from Mark's responses about his own learning at this stage. It might be acknowledged however with some confidence that the activities were seen in the light that was intended



and, more importantly, they were intended to embody the teaching strategies for conceptual change teaching which was the aim of the course.

Mark went on to describe the collaborative plan, teach, review process that he had been involved with during this part of the course, preparing a lesson, teaching it in school and subsequently discussing the outcomes.

“...what we were trying to do by constructing two imaginary countries was to engage the kids in thinking about how a country might arrange itself in terms of health and the side effects of production - like pollution - and rather than explain to them that economists see wealth as measured in such-and-such terms and health in terms of so many doctors, we tried to present a story which they could then interpret. And the way they chose to interpret, we could manipulate in a certain way to suit our ends.”

This could be a lesson designed to provide different understandings, to present the learner with new ways of seeing, but what did Mark mean by “manipulate” and what “ends” were the student teachers pursuing? Discussion of both questions might have provided teaching and learning opportunities for the student teachers. Clearly, manipulation could mean imposing an interpretation but the acknowledgement of the pupils’ interpretation provided grounds for optimism - Mark and his colleagues were engaging with pupils’ thinking. Mark said it was an attempt “to take on the same approach” as the Price and James and Michelle lessons. So what and how could Mark learn from these activities?

Interviewing pupils before and after lessons had created some cognitive dissonance for Mark because he had seen that what pupils say to the teacher may not have meaning for them. It could be a kind of lip-service, giving the teacher what the pupil perceives he wants. This was a learning opportunity for Mark because, clearly, he could not work in the way that he described at the outset of the course if he created situations where pupils simply ‘repeated after the teacher’. That observation alone could put emphasis on the importance of the tasks set by the teacher if meaningful learning is to occur. Mark said:

“I find interviewing pupils before and after lessons a little confusing because seeing through what they were saying and interpreting that as something that

was intrinsically theirs and something that had been fed to them was confusing to me.”

The experience of teaching the James and Michelle lesson seemed to run counter to the intentions of the course tutors. Mark said “...it was important. It made us all aware of where we were trying to get to.” So far, so good but he went on to say “...it was a structure that was given to us - a well-established lesson and it gave me a way to teach this approach.” The problem with this is that it could be seen as providing Mark with some of the ‘tricks of the trade’ (Kagan, 1992) and, rather than stimulate thinking about classrooms, have the effect of causing the student teachers to take on a reproducing mode which is inimical to learning in the sense that it is used here. It is not at all clear (because this was not pursued in the interview) what Mark learned from this experience.

More optimistically, Mark reported that the collaborative planning had been valuable because of “...just organising it among ... teachers who had different views.” The presence and acknowledgement of different views about the planning, teaching and review of a lesson can be a powerful tool for teacher development (Jamieson and Harris, 1992; Harris and Jamieson, 1992).

Mark said that he had learned from the activities:

“I found that this week you constantly had to re-evaluate where you were and what kids were saying - adjust your position...”

Mark also seemed to have understood the role of collaborative teaching in developing a self-conscious, self critical understanding:

“It’s a help with working things out, with planning and with sorting out the responses kids give to your lesson...It also gives you feedback on the lesson which can be a good thing because you can agree with it and think it’s valid and at other times you can think I don’t really agree with that...It’s quite testing and something to get used to because in the long run we will be on our own without that...critique, presumably, to make you focus on what you’re doing and look at it critically and think how could I change that? And have someone else’s mind to work with.”



In Mark's thinking as it is reported by his responses in this second interview, there is evidence of conceptions B and C. There is evidence of learning, perhaps. The focus is off the agent and onto the act and the object.

### 2.1.3. Before the second teaching practice

Mark was asked to use an example from the previous period of teaching practice to illustrate his view of learning. He chose to describe a lesson using a simulation of an industrial negotiation. He said that the lesson made clear to him how participation affects learning.

"We gave a set of roles out to different groups and asked them to prepare...some kind of case. And when they were preparing it, I was thinking this is going to really fall flat because they weren't really interested in the task at all. They were just kind of lounging around and looking at it. And I was asking questions and they just weren't bothered. When we drew all the tables together, and they actually sat down and the thing started, those who previously had been completely unwilling to get involved just kind of started. And then they were all grabbing for the sheets that they'd first been given and trying to put themselves...get themselves involved. And I think every, there was one lad who didn't participate but all the others participated and I really got the feeling that they hadn't done that before. It was a real, they really kind of, you could see them as they spoke struggling with their expressions and, you know, trying to make points in a professional way. And it was really wonderful to see them trying to develop those skills.

It is clear that Mark's observation of the class was acute and his awareness of what was happening in the classroom considerable. However, the tutor attempted to get a clearer view of Mark's view of learning by asking if he thought it was wonderful because he thought the pupils were learning. And in his reply Mark revealed his uncertainty about what learning means in this context of an industrial negotiation.

"...I think they were learning a lot about presentation...We wanted them to get involved in the topic and empathise with their role...that was our aim I think...I'm not exactly sure how that fits into learning."

This intervention and those that followed may have led Mark to reflect on learning for the first time as a clearly defined objective of an economics lesson that he had planned and with which he was happy. The tutor asked:

“Did you have any intentions in terms of economics? Because you talked about presentation and empathy which are sort of overarching skills.”

This question was an attempt to cause Mark to be reflective about the subject matter in context. In the extract that follows it can be seen that Mark sought to provide a statement of the understanding he wanted to achieve in his pupils:

M: Well, I think from economics, really coming to some understanding that there are different perspectives to bear on a topic. I mean they were given the different perspectives admittedly. They didn't generate those but...And some of the arguments that they had to come up with as, say, managing directions or pressure groups for certain things were overtly economic in nature, I think.

I: How did you see your role as the teacher in all that?

M: I think I was a facilitator really. I mean I just gave them the roles and I sat there and I did make comments about what they said and when everyone was talking at once I quietened them down and asked them to talk one at a time but it really was, I didn't you know, get that involved. I did a bit of a summary at the end which is something I always like to have.

I: Were you looking for an outcome? And did you get it?

M: Yeah. I think I was looking for them to realise the different perspectives and the possible problems that arise because people come from different viewpoints into a topic. And possibly how you can move on from a position of deadlock. In that particular case the management just kind of said, 'Oh, we're just not going to do anything' and there was some kind of deadlock. So from there we had to kind of move on. And they all had to re-examine how they could compromise.



- I: Did it have anything to do with economics?
- M: I think so, yeah. There were a lot of economic and industrial type themes in it I think.
- I: Can you give an example?
- M: There were costs. The management group had a costing sheet for their product and so that was an overt kind of economic thing but just the discussion process and the negotiation was a way of understanding how industries and other people will liaise. You know, how they get together and make decisions which I thought was part of that.
- I: Right. What I want to say is that in some sense the economics does seem very pointed in all this. When you referred to it there you said they had a costs sheet and you didn't say that a particular perspective on costs was a kind of understanding that you wanted to get to.
- M: Well, I suppose what I'm saying. I mean what do you mean when you say economics? If you mean where was the economic theory then it wasn't well-defined apart from in that costings sheet. The fact that the fixed costs and the variable costs were mentioned. But if you're talking about an economic awareness type thing where you're involving yourself and some search for a process or a critical thinking or a way of looking at things or a wider economic perspective then I think there was more of that just through this idea that they were empathising with these people and they were getting themselves inside the topic.

It is clear from this exchange that Mark did not have an idea of the understanding he wanted in this context beyond the experience of empathising and being exposed to different perspectives. It is not clear what he meant by "getting themselves inside the topic." But it has to be said that he was prepared to explore this matter - prepared to do some of the thinking - although his last response may have been defensive.

Mark had discovered that working in collaboration had advantages:

“...sometimes when you’ve done a lesson...the feedback you get from it isn’t really what you want. It’s sometimes difficult. But it’s good...”

There are two ways at least of interpreting this response; finding out may be uncomfortable but it causes you to reflect, or if high quality feedback is not available, it is difficult to reflect.

Mark was able to explain how collaboration aids reflection. Describing the difference between his teaching partner’s approach and his own, Mark explained:

M: ...I mean there are times when just his approach to teaching and the kind of teacher he wanted to become, you know, in terms of how friendly he is with the kids, how he relates to them in the classroom, how jovial he is, how he speaks to them. I mean I just won’t become a teacher like that and I sometimes have problems with that and I’m sure that he sometimes has problems with the fact that I’m very friendly with classes, and, especially when we’re teaching together, our disciplinary structures are quite different, I think. The way we cope with things.

I: ...are they coming together?

M: No, they’re not coming together. I don’t think they’re coming together or going apart. I think they’re staying the same. But I think what we are doing is getting an understanding of where each other’s coming from and being more sensitive to that so that when something arises we can appreciate the position and can guide our way round a problem instead of hitting it head on. So for example, in a classroom when he calls someone for doing something, you know, he brings them up, disciplinary whatever. Then I will often just back off and not really get involved, and leave the controlling role to him. So just the fact that I know we’re different in that way is helpful.

So what had Mark learnt? Well, he was not describing learning in terms of understandings but in terms of processes to be undertaken. In other words,



an emphasis on the acts and not the object of teaching. He could clearly be reflective - his use of his partner's contribution shows that.

He had by now moved away from a focus on himself as the agent of teaching and was willing to engage in discussion about the object of his teaching.

#### 2.1.4. At the end of the programme

At the end of the course Mark was asked to say what he had learnt. His answer had two parts. One part, what he thought he was "more or less sure that I've learnt":

"I learnt a lot about how we go about teaching, what we use to teach and what we can expect to do with that teaching in economics..."

The second part, in which he was less sure of the nature of the learning, although he felt he had learnt something:

"...I think my perspective has changed on how we should be learning and how we should be teaching and how we should go into a situation where we want to teach and learn. It's not so much any more that you go in and speak knowledge and people hear knowledge and they understand it. I have bought in, to some extent, to the idea that there's something more fundamental that needs to be done there..."

Mark claimed his perspective had changed so may be this can be cited as evidence for a shift in focus. It is tempting to argue that Mark's focus was on the object of teaching - seeking meaning - by the end of the course accompanied by all the tentativeness that that state implies. There is evidence that his lesson planning involved such a view of teaching. In preparing a scheme of work on International Trade which became the core of his final assessed assignment, he sought to develop a deep approach in his pupils - continually reviewing published text, working with pupils' understanding at each stage in a self-conscious effort to work in a metacognitive way with the pupils' contributions.

But it could also be argued that Mark's state of uncertainty was not a satisfactory outcome unless it had created a need to continue to learn

prompted by the cognitive dissonance - to continue the search for meaning. There is some evidence of the process of learning that Mark had experienced.

"...it would be nice to do more work on the ideas and concepts that we've already worked on...specially, on planning areas of the economics curriculum but also doing more work on how we go about the teaching and learning thing. And take me on from the stage that I am at now where I'm not quite sure what the whole thing was about. It just seems like a whirlwind that I went into and came out thinking differently but I'm not quite sure in what way. Take that on and go somewhere else with it. It may not be that place we move onto is well-defined either..."

Mark was encouraged to say more, and in so doing, described what it felt like to experience the kind of cognitive dissonance or conflict advocated by teachers of programmes with the objectives similar to those of this teacher education programme. On the positive side, it shows it is possible to work in this way; on the side of caution, it underlines the sensitivity that is required when learning is seen as changing the way the learner views the world:

"...I consistently feel dissatisfied and uneasy but, as someone put it, I feel like I'm in cognitive conflict and whether that's a positive thing or negative thing that needs developing...because whether I go on from that conflict and then solidify things and learn things and become more secure in that learning or whether I just rely on what I learnt, knew before..."

Mark was asked what he would do as a teacher if he had the job of teaching himself knowing that he felt this way (an attempt on the part of the tutor to explore ways of helping Mark to learn). He said:

"...my instinct is to say to you, 'well, why don't we look at this teaching and learning issue and talk about it in an explicit way?'"

What did he mean by explicit?

"...I think making sense of the theories that go behind it explicit. Phenomenography - making that, doing more research into what that is all about and why we have faith in it. I have an intuitive thing...to use it in some way..."



To pursue further what he meant, Mark was asked whether this strategy of being explicit would be one he would use to teach to others what the Economics PGCE programme has intended for them to learn. He replied:

“...then I’d trip over your theory by the fact that if I then make all this explicit, whether it has any affect at all on the people who are learning,...that is a criticism to the idea of just saying ‘Oh, this is what we are going to do and it is called phenomenography. We learn it because of these reasons and just write this down’...And this would become even more rhetoric and even less learning.”

From what he said, Mark had rejected a view of teaching as transmitting information and it may be that the discomfort he feels comes from a need to be seeking meaning and having others do so. This new state of awareness will not allow him to accept simple explanations which he can reproduce. Rather he has to think it through. It is akin to reflective awareness. But he lacks confidence. The programme has not provided that.

Despite the continuing cognitive conflict, Mark was able to conclude the interview with clear statements of his views of what it means to learn economics and to learn to teach economics. He said learning economics was:

“...developing some critical thinking skills and an awareness with which to tackle economic issues...[for example] we can look at international trade and pull bits out of it and take it apart and look at it in some detail and make criticisms of situations that arise which we can see as bad and situations which we can see as good and just making sense of that...that’s what it does and it does that through giving you explicit skills...understanding some aspect of international trade or some aspect of the way prices are supposed to work. And then as an addition to those explicit skills,...giving you the power to then think beyond that framework...and criticise the whole set of things and look outside that. So I think economics is, well, to me now, a critical thinking thing. I think that’s the value of it.”

He said learning to teach economics was:

“...about getting a perspective on economics which is suitable for economics in general...but also is specifically suitable to the age group you are working with. And also working with stimulus - what works as a stimulus, what doesn't. And there has to be I suppose some classroom management stuff that you have to go through as well to economics. So...a set of those things.”

It is possible to infer that the programme achieved its objectives. Mark learned. It is a big claim to make but it might be given credence by the fact that, from what he said, Mark was unable to pay lip service to these ideas. As a view of teaching and learning and a description of the effect of a pre-service programme, it supports the claim of those who would emphasise subject matter learning in teaching teachers.

## **2.2. Simon**

### **2.2.1. At the start of the programme**

Simon described good teachers as:

“...charismatic people interested in their subjects and interested in you as pupils. They'd make you enthusiastic about their interests...”

This idea of the charismatic teacher is a view of teaching which focuses on the agent of teaching.

Simon expected to learn to be a teacher by being “given lots of leads to follow up...” He may have had in mind an apprenticeship model of teaching - perhaps, the ‘tricks of the trade’. He thought he would learn to be a teacher:

“By giving the leads from your [the tutors'] experience and the experiences of teachers I'll meet during the year. I realise you can't just be a teacher. In the last two weeks of primary school [experience] I coped and people said I was doing quite well but - a lot of knowledge, lingo, jargon, ways of controlling a class which I could only get if I was in that environment for many months. I think to have a year of study, where you can intellectualise about it, is going to be helpful and necessary to be effective in class.”



Simon was asked what learning to be a teacher is about. He saw it as developing himself as the agent of teaching and learning - the charismatic teacher:

“...To develop one’s personality...because if you are not an inspiration, how can the class get inspired?...developing oneself to be a strong, disciplined person...”

With reference to subject matter, teaching and learning, he said:

“...I have to go into the classroom to find out what the economics teacher talks about, and read economics text books...University very much intellectualised it - too abstract for school situations.”

There is an interesting division that Simon made between his intellectualising about teaching during the programme and the inappropriateness of intellectualising for school pupils. A clear division of knowledge and access to it. And, of course, a very simplistic view of teaching (conception A) based on teacher talk and books. The only real challenge he acknowledged was “how to control classes.”

On collaboration, Simon hoped that “you can share with us your knowledge of how to improve our individual needs...” This fitted with his summing up of the job of teaching as “passing on knowledge”. He described “control of a class” as a “major fear” and he wanted to learn how to do it.

### 2.2.2 After the first 5 weeks

So what did Simon learn from the initial course activities? He interpreted the activities as stages:

“...they went in stages. You should get to know the children first, their stages of development, so you know where to pitch the lesson at. And then finding the appropriate lesson to give that child in relation to the curriculum as subjects. So I would put interviewing the pupil first so you get to know the pupil and then deliver the lesson...”

The activities had caused Simon to think about teaching in terms of “stages of development” and the idea of delivery. His view remained focused on the teacher as agent of the teaching (conception A) and the information that the teacher would need to carry out this role. He did not see the teacher as a learner except insofar as anyone could be either - it just depended on who was giving information and who was receiving it. He said:

“...when I’m here as a learner, I see you the lecturer as a person to give me information...when I’m at school, I expect the pupils to see me there as a teacher and I can give them things...But then again they give me things which will help me be a better teacher. It’s a two-way process.”

### 2.2.3. Before the second teaching practice

By now Simon was putting his stages into practice. He illustrated what his intentions for a lesson were and described the tasks:

“...we asked pupils to define more carefully words which they might just have taken for granted as an everyday usage. It wasn’t a case of giving them information so much as asking them to search inside themselves for the data they already might have...”

It is interesting to point to the different tacit theories of cognitive functioning that Simon seemed to use. In term one, he seemed to subscribe to a developmental theory; in this second term, he was using something akin to an information processing theory of cognitive functioning - “to search inside themselves for the data.”

Neither of these had been taught to the student teachers by the course tutors but, of course, both instances revealing Simon's tacit theories would have provided teaching opportunities had they been explored. What exactly did Simon mean? And what evidence did he have?

There is evidence that Simon’s attention had shifted focus to include the act of teaching (conception B). Although he was describing a lesson that he had planned and taught with other student teachers so it could have been their lesson, in terms of ownership, which Simon was attempting to make sense of:



“...I would be facilitating...making them stop in their tracks and look at what had just passed them by...We had groups brainstorming, putting things down and comparing them with other groups. We gave them some time to develop these ideas without taking over other people’s ideas. It’s difficult to put into words what happened briefly.”

Again, there were interesting things said which could have become part of an attempt to shift Simon’s focus of attention. For example, what did he mean by “passed them by” and “without taking on other people’s ideas”?

So what had he learnt from his experiences of teaching? If his answer is to be used as evidence, he had learned nothing about teaching and learning subject matter.

“...I got a large amount from the fact that it was another school, another environment, ethos, out of London. A new stimulus because you get deadened to many experiences at the one school on TP. It’s also important because I intend to go out of London to teach...It’s very middle-class, white, more laid-back and less stressful, more sleepy, dreamy pupils compared to the hyperactive kids you can get in the city...”

Now it is important to stress that the interviewer could have refocussed the discussion, but if this is what Simon chose to say in response to a question about his own leaning, it is possible to conclude that his experiences of learning to teach had not moved him to a new conception of teaching. The description of pupil differences in itself is indicative of a view of teaching and learning far removed from the intentions of the programme. There was no reference to understanding subject matter, rather pupils were classified using sociological and clinical psychological categories.

How would Simon cope with the rest of the course? Clearly, the tutors would want to think hard about how they should intervene, but did they? There is no detailed record of the teaching that followed and of Simon’s response to it.

#### 2.2.4. At the end of the programme

After a year on the course, what progress had Simon made? There was some sign that fears about control had abated. Simon said he learnt “lots of things” but:

“...mainly to listen to what others are saying. As a teacher, learning to be patient and be silent and not barge in all the time...my position as a teacher is not going to be questioned so I can afford to give as much space as possible to the child to express themselves. I don't have to say, 'I'm the boss, I've got the knowledge, not you.'”

In what he said to the question, 'what should students on the PGCE programme learn next?' it is clear that he saw the task of learning to teach classes completed. He gave examples of what to do next:

“...to prepare the teacher to go into the school where they will be teaching...I'd like now sessions, lectures with union representatives, teachers with lots of experiences to show you the ropes, pension plans,...contracts...”

Simon wanted to be inducted into his school. Of course, there is nothing wrong with that but his interests were resonant of the 'sitting with Nellie' (Stones, 1989), view of teacher training and education (“teachers with lots of experience to show you the ropes”). This is in stark contrast with Mark's view which focused on pupils' learning.

One of the most telling statements made by Simon was “education is a lot about giving people signposts so you can find out how to find the answers”. He had used the same word “signposts” in the first interview at the beginning of the course. It is tempting to say that the limited impact of the course had been to improve Simon's sense of direction and his skill at making signposts!

It was still a view of teaching as transmitting information but Simon had a wider repertoire of sources - more than just the teacher. He had thought about the acts (conception B):

“...different experiences give you the information...”



His description of learning economics could be incorporated within this view. Learning economics involves:

“...being able to see what happens behind the scenes. For example, the organisation necessary to produce products, all the theories which go into the decision-making of that product. It peels back a few layers of the skin to see how the cogs work or don't work. To see how the government spends money in the economy and how they follow their decision-making and on what basis they take those decisions...”

Going “behind the scenes” was questioned by the tutor. Simon replied:

“...You'd give them some pointers to help them open up a discussion about the meaning of words. Hopefully they will come up with the information rather than you.”

This idea was probed further. Simon described how the learning experience would be designed. The learner would:

“...articulate [her] view and share other people's opinions of that and take some of that on board. You can take a horse to water but you can't make it drink. Hopefully, in the lesson, issues will be raised which conflict with [the learner's] views and [the learner] will have an opportunity to reflect on that and reassess it later on...”

Of course, there is a chance that no learning would take place, rather the entrenchment of views. It is as if Simon had a notion of conflict or dissonance as a factor in learning but had not worked through the implications for creating learning experiences. It is not likely to be the case that simply exchanging views will lead to learning other than that of reproduction unless the learner can be helped to think about his or her thinking (develop awareness through reflection). This requires skill beyond facilitating the exchange of views in the classroom.

Even more telling was Simon's view of examinations as a constraint on teaching:

“There is a real conflict in my mind about the responsibility the teacher has to get them their exam results because that’s what you are employed for...Or is the teacher there to help their understanding...I haven’t resolved that dispute at all...”

The intention of the programme had been to help student teachers to see that understanding allowed pupils to pass exams. The idea that pupils can pass exams without understanding is a very difficult view to change. The effect of assessment on the curriculum is well-documented (Gipps, 1994). The PGCE programme should have produced teachers who, faced with this view, would have demanded better exams. This was not an outcome achieved by Simon.

## **2.3. Salif**

### **2.3.1. At the start of the programme**

Salif came to the course after completing a degree in PPE at Oxford University. He described his schooling as formal “run by Jesuits” and that in his own teaching he wanted to get away from that. He said that when he thought about schooling, he thought about his own experience of it.

Salif said the characteristic a good teacher was “in the end...whether you [the student] think the teacher is interested in you and your development...you’d be prepared to work for them if you feel they’re putting a lot of effort into it.” This could also be seen as “enthusiasm.” Teaching “methods” were not thought to be important - even “using dictation” seemed to work for some. So at the outset it was not at all clear what Salif’s view of teaching and learning was - if anything there was a focus on the teacher as the agent of teaching and learning (conception A).

Salif felt he had the enthusiasm about economics but he needed:

“Practical things...being able to pick up on children who feel they are not getting enough out of the lesson. Trying to motivate and stimulate their interest.”

He was interested in the idea of teachers seeing themselves as “facilitators.”



Salif felt that different teaching methods would be suited to different people.

“Doing it in different ways can work for different people. It’s really what you do with the mass who do struggle at school and how you can try and improve their performance and their interest in school. Brighter ones can look after themselves - not completely, but however you go, they’re likely to prosper anyway. It’s what you do with the rest.”

It is difficult to interpret this statement because it is not clear what Salif meant by performance. In what followed he seemed to emphasise the importance of meaning (conception C).

“Hopefully...I’ll be able to develop approaches which gets them to...think for themselves...” as a way of leading into “more formalised stuff” but he saw the way to learn how to do that as “...through watching other teachers do it, listening to you [the tutors], going to books etc. and, the ultimate test, me going into the class and hopefully doing that.”

It could be argued that what Salif was describing was the sequence in which he would teach:

“...rather than me standing up there with a model of perfect competition and drawing loads of graphs on the board...I’ll be able to develop approaches which gets them to think about how different markets are organised...and to think for themselves why these structures are there. From that, lead into more formalised stuff so that, once they get to those graphs, they will have some meaning for them - a better understanding of what those lines mean...”

Salif felt that enthusiasm for the subject was not enough.

“It comes down to getting into the classroom and developing the skills - building up an awareness of children and their needs in that classroom - the dynamic of how things are going and how you can influence the course of that to steer them to an interest and appreciation of the subject.”

Against this must be put Salif’s explanation of what he expected to learn during teaching practice

“Basically, strategies of...how other people cope, what seems to work. Then try and apply them...”

Reading the transcript of the interview suggests that Salif was very keen to ensure that those pupils in school who have lost interest can be given the opportunity to achieve examination success. The search for alternative methods and approaches and the emphasis on a sequence which culminates in the “formalised stuff” seemed to be Salif’s way of achieving this. He summed up the job of teaching as:

“Getting the kids interested and asking questions and then hopefully passing exams at the end. You can’t neglect them. Kids want them...Hopefully it’s giving them some way into the subject.”

This emphasis on exams can create a tension in student teachers at the outset of the programme when exams are seen to require reproduction of information and this is seen to clash with a view of learning as seeking meaning. (Of course, these objectives need not be in opposition, but in practice they can be seen to be.) For this reason, Salif’s view is interesting because it appeared to have reconciled these. Of course, Salif may simply have been speculating about an approach to sequencing activities which is different to the formal teaching (dictating notes. etc.) which he had experienced and which he felt would not be suitable for other types of young people. In other words, a different sequence but with the same intended outcome.

“We had a student [teacher] when I was at school who gave us lectures as if it was at university...I wouldn’t want my practice to be like that...I couldn’t see him in a stream 9 class and surviving.”

So it may be that it was the act of teaching (conception B) that was the focus of Salif’s view rather than the object because that was the same - passing exams.

This view carried over into Salif’s view of collaboration:

“You’re here [the tutors] to give me a basic groundwork but beyond that it’s a sort of partnership where we can exchange ideas and how we’ve tried to do



this in a particular school to try out different approaches in different schools. May be it won't work here but will work there. When you do go to teach in a school your outlook's going to be very narrow - it's going to be determined by that school and its context...You won't have time to try and look at all the different approaches so we must try and make the best use of this year for that. I hope I can arm myself with a number of different views even if they are not used very frequently."

Salif's last sentence suggests a view of teaching focusing on himself as the agent of teaching securing a set of 'tricks of the trade' (conception A).

Salif's transcript contains all three conceptions.

So what did Salif learn and how?

#### 2.3.2. After the first 5 weeks

Salif described his response to the activities of the first 5 weeks of the course:

"Basically, we responded to the text-reading exercise and it showed how we interpreted data and learned from it. And then, following that up in classrooms, looking at how pupils viewed the world and how we should use the way they look at the world to try and introduce new ideas and get them to re-evaluate their views in the light of those ideas and how that works..."

He went on to say

"...looking at how the kids responded was important but, before you can make sense of that data, you have to have an understanding of how you yourself learn and how you view the process of your own leaning. Without that being made explicit to you, looking at other things is of limited value to you."

This last statement was not probed more deeply by the tutor/interviewer to discover how Salif understood this, but he seemed to be making a point which would not be wasted on phenomenographers that without a refocusing of attention (conceptual change) what is focused on is constrained by the conception of learning held by the observer. For curriculum designers and

teachers, it is an important observation since Salif was arguing that the sequence of activities was crucial. And that if the first activity he described is not powerful in this sense (ie leads to conceptual change in the way learning is viewed) observing classrooms has a limited impact - the observer can only see what the observer can see. He went on to say

“...in some ways, they follow on from each other, and are interdependent, so to have one without the other devalues them.”

Of course, this observation does not of itself indicate that Salif had a more powerful conception of teaching in the sense of focusing on the object of teaching. There is evidence from the transcript that, although he was teaching about the object of teaching, he was still undecided about that object - teaching to a syllabus or what? It is the issue or tension that appeared to be implicit in Salif's view of teaching and the object of the course. He said in this second interview:

“...I've still got a concern about the whole thing - like the idea of facilitations which I quite like - but once you get on to the secondary level [cf. with the primary level] and you've got that syllabus to teach, you start teaching. I feel uneasy about it but it's something you have to do.”

Evidence that Salif focused on the act of teaching (conception B) rather than the object in a meaningful sense, and that he maintained his view of teaching while accepting the importance of monitoring pupils' responses as feedback on the success of the teacher's activity, comes in his description of the difference between teachers and learners.

“It comes back to the question of facilitating and guiding...”

These are often key words used by those whose attention is drawn to the acts of teaching. Facilitating what and guiding what? These are questions which are usually seen as unproblematic, as in Salif's case.

“The stuff we are presenting to the kids we should have clear in our own minds how we view it. Whereas for the kids it may be something they haven't thought about before. They have to go through a process of trying to assimilate information and manipulate it in ways they think appropriate. The



ideal teacher has to facilitate that because most of these theories [that are to be taught] are fairly logical and have come from other human beings - logical thought - it should be inherent in everyone so that they come to those theories. You [as a teacher] shouldn't have to do much to get them there. It may be difficult but the theories should be there. It should be possible but then, starting as a teacher, we've got a slightly different learning process to go through: learning how pupils respond."

In what Salif said, pupils' responses seem useful to the teacher/facilitator in guiding the learning process which in itself is not seen to be difficult because the theories are there. What Salif had not seen by this stage in the course is that pupils may have different theories held tenaciously and that challenging those theories so that pupils become aware of their thinking may be problematic.

Salif thought collaboration "facilitated the process of looking at how kids respond." It also gave feedback "about how you're coming across in the classroom and how the kids are responding and whether the lesson's working." He said the partners in collaboration had different roles: "...one guiding the information and the other helping..." but he thought it important that he had experience of teaching alone in the classroom because "we'll be doing it ourselves in the classroom."

In these final comments of interview two Salif was talking about guiding information and one person versus two people in some sense team teaching. This is in contrast with the intention of the programme which was that Salif would be seeking pupils' meanings and using that evidence to develop his understanding of his role as a teacher - something that he would continue to do in the classroom throughout his career if the programme was successful.

Salif's experience of teaching practice came next. How did this help him to learn?

### 2.3.3. Before the second teaching practice

What had Salif learnt during the first period of teaching practice?

Salif chose to describe a lesson he had planned, taught and reviewed collaboratively with Daniel. Salif described first the difficulty that they had experienced in deciding what emphasis, content and approach should be used in conjunction with a property development project role play they had devised:

“...how much/big a role the cost information should play to begin with and how much we should concentrate on getting them to use things like spreadsheets...it was very difficult for us to use the role play because we were hanging on to what we thought it should be like and therefore abstracting ourselves from it...We had to decide to come to a decision about how we were going to do it and then forget about how we thought it should have been and follow it through as we agreed...”

They had difficulty in collaborating. The difficulties experienced in planning caused problems, in Salif's opinion, with the review. But it seems the teaching did provide an opportunity for the student teachers to learn.

They found that it was not enough to devise a role play that raised issues. If they were to engage their pupils in a process of reflection on their thinking about property developers, they had to find a way to challenge effectively some of those views. They needed stimulus material, for example, that might cause the pupils to think about why they were saying what they were saying and why they were participating in the role play from the perspective that they had chosen. Salif described this:

“...we found that it [the role play] served to reinforce their view about what business and property developers were all about - basically money...And then we had a problem getting them to challenge these views and giving them things to get them to consider wider aims such as environmental issues and responsibilities for workers' safety...All issues which we did raise with the role play but they tried to avoid...We thought raising the issue would be enough and it wasn't...it's what they make of it...we then have to look at what they are making of it - and look for something that will challenge what they're doing with it rather than what we see that they should be doing with it...and there were opportunities...”

Salif had positive things to say:



“...In the end, it actually got them to do certain things that we wanted them to do with it - in a very negative sense. They really started asking questions about what was the use of this exercise and why were they doing it. Asking really searching questions which at the time was uncomfortable but which I was really pleased about. They were asking questions which I felt were really important...if you could have then taken on that questioning...and developed it in a more positive way, it would have been really, really good...we’ve learned quite a lot out of it...”

This is evidence of student teachers learning through collaboration on planning, teaching and review of a lesson which caused them to ask fundamental questions of the type: What is worth knowing and learning in school/college? How does one teach that which is worth knowing? What does it mean to be a professional who is capable of teaching worthwhile knowledge? And they are arising through the consideration of specific subject matter as advocates of this approach would have it (Kennedy and Barnes, 1994).

It is worth noting in conclusion here that both student teachers thought that they were working in a way that contrasted with the regular teachers of this class whom they had observed. They were in a sense happy to diverge from the ‘apprenticeship’ model.

“...we observed some of the lessons done by the normal teaching staff. They were doing it in a very formal way - from theoretical textbooks - and we decided to do something a bit different...”

And the “normal teachers” must have encouraged this ‘experimentation’ thus creating an environment conducive to the aims of the Economics PGCE programme. This was a college in which the supervising teacher had been a member of the course team at the Institute in previous years and who shared and understood the aims of the programme.

It is clear that Salif now saw challenging pupils’ conceptions as problematic and was grappling with ways of doing this. He had moved on from the previous interview and was asking fundamental questions about the object of his teaching (conception C).

#### 2.3.4. At the end of the programme

Salif was not interviewed. He chose to teach a lesson which was reviewed with tutors. This data is available but it has not been included in this study.

### 2.4. Kim

#### 2.4.1. At the start of the programme

Recently graduated from City University, Kim described a good teacher in terms of his approachability, his ability to “command control”, and his interest in all his pupils irrespective of how “clever” they were. She saw her development as a teacher occurring over “a few years”. She hoped she would be “taught something about how to go about teaching.” She felt that in her experience of working with younger children (8 - 12 years) and remedial readers she had shown an interest in them. Kim thought she would develop as a teacher through:

“...other people’s experiences as well as my own, doing lessons, discussions, learning through being in school, talking to other teachers, making mistakes...”

In summary, she saw learning to be a teacher as:

“...with a teacher, learning to go into a classroom...make myself interesting... follow a curriculum... be able to make the subject interesting... control the class...”

Kim saw the tutors as people

“To actually come back and discuss problems [with], share experiences - you’ve all had lots of teaching experience.”

She thought collaboration with other students on the course would be helpful because problems could be shared. Towards the end of the interview, Kim expressed her view of teaching:



“...making them want to learn, make the subject interesting to pupils. Making them want to learn is so important...Enthusiasm - making it interesting so that they question subjects. Bringing things up from everyday experiences.”

She was asked if that had to do with her as a person and she replied by saying again:

“...you’ve got to have enthusiasm for your subject. I’ve been in classrooms where the teacher doesn’t care...I want to make them interested.”

Kim put great emphasis on the role of the teacher (conception A). The only slight insight she gave us into the way she would teach was when she referred to pupils asking questions and the teacher bringing things up from everyday experience.

So what did Kim learn? And how?

#### 2.4.2. After the first 5 weeks

Kim referred briefly to the activities of the first 5 weeks

“...the conditioning exercise [was] to get us thinking about different ways of looking at things and how we perceive things...the interviewing...was to see if...we’d actually taught them anything - their understanding of what we’d taught them...‘James and Michelle’...I found that good - we could go back and really discuss in detail what was happening in class...report at each stage and look back at what had happened - what we’d experienced...and the mistakes we’d all made. It’s so hard when you stand up in front of a classroom to see what’s happening but when you’ve got the rest of the group, there’s so much feedback it’s really helpful.”

The interviewer did not probe these statements further so it is only possible to infer tentatively that Kim retained a strong focus on the teacher as the agent of teaching - evidence comes from references to seeing if she had taught them anything, and mistakes made by teachers - and she was not using the experience to think about pupils’ thinking and her own thinking about that but rather to get the performance right. She might have been refocused on

this idea of mistakes - she was engaged in learning about learning so how could she make mistakes?

The reference to standing up in front of the class evokes an image of a common experience of being taught. Kim continued to refer to mistakes when she described the lesson she had planned, taught and reviewed collaboratively. She did not talk about the quality of the pupils' learning in relation to the qualitative change she might have planned for but rather said

"...we found we'd made a lot of mistakes and it was more interesting than getting it right in a way...we aimed too low...with the...James and Michelle...we aimed too high but this one we aimed too low and the kids had got it..."

At this stage in the programme Kim was not focusing on pupils' learning in the way the programme intended; she saw teaching in a simplistic right/wrong way with outcomes described in a similar way. She saw learning to teach as finding the way to get it right. She might have been helped in her own terms at this point by some 'tricks of the trade' perhaps. Of course, they were not forthcoming because the tutors wanted her to think about learning in terms of the quality of the pupils' thinking not to see learning in terms of "the kids had got it." This view of learning (conception A) is generally associated with teachers controlling access to knowledge and pupils 'guessing' what is perceived by the teacher as right or wrong. It closes down thinking .

Having said all this, Kim described the early activities in terms of stages - "we learned something from the previous stage..." Of course, the question is what did she learn but this was not followed up in the interview. She stuck to the stated view that "teachers are trying not just to impart knowledge but some kind of understanding." And Kim described the collaborative plan-teach-review priorities thus:

"...We've both got an aim, both want to achieve something, and then reflect on what's happened..."

But what did she mean by reflection? She said:



“...after each lesson, you sit down and talk about it - where we were happy with it - helpful if you’ve got different points of view - one from the front, one working with a group or sitting at the back being objective, one just looking on.”

This is one view of ‘reflection’ but it may not involve awareness of thinking about subject matter learning at all. The different points of view appear to be just that - to do with location - and not to do with perceptions of pupils’ perceptions. It is possible that this was paying lip-service to reflection in the sense of thinking about the meaning attributed to the classroom experience. The points of view may be used simply to observe surface features to do with the management of the classroom.

#### 2.4.3. Before the second teaching practice

At this stage Kim’s view of learning was not clear. She was asked to use an example from teaching practice to illustrate her view of learning. Her first response was to describe what activities she had engaged pupils in. She was asked to describe learning in terms of outcomes. She referred to the lesson(s) on division of labour:

“...they saw it would work and they were able to give examples...of what takes place in the economy, what takes place in school...They view it not just of jobs but the division of the task...How interdependency is very important...”

She agreed that these were the outcomes they were looking for:

“...we looked at the problems as well as the advantages...”

Kim was asked to give an example of how her view of learning had changed during the course:

“I suppose when I came onto the course, I wasn’t really aware of how I was...getting the kids to understand. Put them in a position of looking at a particular topic. Looking at that perspective and be in that situation but I think that helps...”

Kim might have made a passing, unconscious, reference to situated cognition (Rogoff and Lave, 1984) here but what is clear is her view of teaching was focused on the acts of teaching (conception B). Her discussion of division of labour did not go beyond a description of what it is, examples and advantages and disadvantages - the information to be found in any economics text - and the outcome seemed to be that the pupils could reproduce this, although, to be fair, the evidence is not clear because Kim did not have much to say about learning.

Kim thought collaboration was important but realised she was depending on her partner (Emma) for ideas and that she needed to break away from her partner if she was to incorporate any of her ideas into her lessons.

“...I would contribute but a lot of the ideas were Emma’s...she would come up with the ideas first...They were all good lessons as far as I could see...we’re going to work independently...I would want to show her most of my plans...”

It is just possible that Kim saw Emma as a teacher rather than a collaborator in the learning process. The question is why? Emma certainly had a different view of teaching and learning which she could articulate, and she would have been capable of teaching Kim. Perhaps the difference in conceptions was too great and the interventions of the tutor were ineffective or inadequate in some sense to move them together, ie Kim up to Emma. The collaborative school experience was in a way proving a hindrance to Kim’s development.

#### 2.4.4. At the end of the programme

Kim chose to give a lesson.

### 2.5. Matthew

Matthew joined the course with a degree majoring in textiles. Aged 24 years, he had some commercial experience.

#### 2.5.1. At the start of the programme



Rather than describe a good teacher he had experienced, Matthew listed facets that appealed to him:

“...you came out...with a decent pass...”

“...managed to maintain your interest...”

“...the younger the teacher...the better time you had...the laughs were all part of schooling...”

He elaborated a little on how teachers maintained interest:

“A lot of it was to do with the subject, the way it was taught. A lot of it was down to the individual - whether they’re interested in the subject themselves...”

Matthew made a clear distinction between “someone who’s very intelligent and knowledgeable but not a particularly good teacher.” For himself, Matthew thought he needed to develop:

“The ability to communicate well; to relate to the children...To get the subject over in such a way as to interest them and to encourage them to want more and to want to learn...”

It was a focus on the acts of teaching (conception B) and not the agent. To develop he thought experience in the classroom is essential. He thought the course would be hard work (in commitment and time) unlike any course he had taken previously where he had only worked hard for the exams. He thought also student teachers were:

“Taking on a huge responsibility in terms of the way things are in education.”

He said he wanted to be “good” at the job by which he meant:

“By them [the pupils] getting something out of the teaching and, by that, one getting something back as well.”

He had strong, positive expectations in relation to collaboration with student teachers, supervising teachers in school and tutors during the year of the programme.

What did he learn?

#### 2.5.2. After the first 5 weeks

Matthew explained what he thought the tutors were trying to do with the activities of the first 5 weeks.

“On a superficial level, engender an understanding of certain principles involved in economics - the way an economist might look at the world rather than how a lay-person would view it...that involves a deeper principle of trying to change people’s perspectives...”

He exemplified this with reference to a lesson on which he had collaborated:

“...There were particular issues involved in each lesson. The islands one for instance was trying to engender an understanding of the difference between a qualitative and a quantitative measure of standard of living which was a specific one - underneath it was an attempt to change the way the kids were looking at things...”

So here is a conceptual change view of learning but significantly the next finding of this study shows that by working collaboratively with a focus on pupils’ learning it was possible for Matthew to learn about teaching in a deeper way - a conceptual change learning. He went on to say:

“...At the time I wasn’t sure but it became apparent it was also the way we were supposed to be looking at teaching...Trying to knock down preconceptions by involving us [the student teachers] in the process rather than looking at it from outside.”

This awareness was accompanied by conflict - inevitably, it might be argued.

“...being aware to what you were trying to do to us and for us...I’ve become quite uneasy about it. There’s a conflict existing between what you’re trying



to do with us and what we actually have to do on teaching practice... Something such as AL Economics, I can't imagine doing it any other way but standing at the front and talking about it...but it will be interesting to see what happens when [you, the tutor] comes in. I really don't know what I'll be doing to fit in with what we've been led to think. It's a better way of learning."

It was as if, having become conscious of teaching and learning in a new way (a changed conception to conception C), Matthew had now to explore it further for himself in classroom contexts in collaboration with supervisory teachers and tutors, teaching different age groups, different subject matter, etc. Unlike Mark, he seemed to be clear and committed but still needing to think through what is involved in teaching in each new context, for example AL Economics.

The teaching practice and the supporting staff in school had a crucial role to play in Matthew's development at this point. Matthew said he saw himself as a learner "first and foremost":

"Teachers are teachers and learners. You hear teachers say when you stop learning then it's time to quit...I'm a teacher as far as the kids are concerned but that's fair enough - you need to establish that relationship if you want to get on in class."

This is a student teacher whose focus of attention was off his own self-image and classroom management issues and on learning about learning to teach though thinking about what he was to teach. The need to manage the class was simply a part of that process - not the end of the process - not a product of learning to teach.

Matthew collaborated well to his own satisfaction with Mark but he emphasised one of the potential pitfalls of this approach to teaching teachers:

"...we criticised each other - constructively, I hope - we both agreed to be honest about it at the start... So there's helping each other and planning. We're fairly compatible. It would be a nightmare to do teaching practice with someone you didn't get on with..."

### 2.5.3. Before the second teaching practice

Matthew explained his view of learning using an example from teaching practice to illustrate it. He chose to talk about a role play centring on the privatisation of the prison service:

“...There was one kid...all of a sudden he just came out with it that ‘my mate had been in jail’ and that gave him his perspective and he had an opinion, as valid as any others. There’s no one moment or one incident where you can put your hands up in the air and say that you’ve learnt as the whole process is useful - of kids being able to talk to each other about different opinions and perspectives...”

Matthew was asked if he would be happy if all the pupils did was to express an opinion. His reply was that:

“...they need to do a lot more than just express an opinion. Just to begin, to appreciate that there’s a perspective other than their own; that there are all sorts of value systems and perspectives and frames of reference...at play at the same time and these things are sometimes brought together by an incident or set of circumstances and they have an influence on this thing, this outcome.”

This evidence would suggest that Matthew taught in a phenomenographic way - creating opportunities for pupils to become aware of the way they see a phenomenon and to re-conceptualise.

However, the problem that Matthew raised early in the course about the disjunction of his approach and what was expected in schools still existed for him. He felt that the link was tenuous between what and how he would want pupils to learn about the economic system and the way AL Economics, in particular, was taught in school.

“...thus far anyway being given a subject such as indifference curves to look at. You’re sort of limited really by the fact that you’ve got six weeks to teach it to kids who are desperately trying to just get as much information as they can in order to pass an exam. It’s such a constraint, it really is.”

Would he not teach indifference curves if he could?



“I’ve never really thought about it as being an actively useful way of examining an economic phenomenon but I think, if you take it back to the shape of the demand curve and consumer behaviour, I think that’s quite a fundamental thing. I’ve never figured out a better way to teach it, a different way to teach it, a more effective way. But, indifference curves, it just becomes this thing that’s taught at A Level. It’s just got no meaning...they don’t appreciate it. They can’t because of the way that it’s packaged, the way it’s incorporated into their exam and their education.”

This exemplifies Matthew’s use of the ‘what is worth teaching?’ question. He wanted meaningful learning but he was afraid he would not be able to provide it through his teaching to the syllabus. Certainly, this is a piece of analysis which, at the time of writing, has just had its status reduced in the A Level Economics Syllabus. But it may be that Matthew needed to be encouraged to think again.

Matthew claimed his view of learning had changed over the months of the course:

“...I’m not sure I had an angle on learning as such anyway but the experiences on this course have certainly made me think about it a hell of a lot. Each new experience, new situation, adds to it but clarifies it in a way because it throws up a lot of questions and challenges which you’ve got to meet if you’re to get through it...I’m not moving towards a definitive understanding of learning or an interpretation of it because I’m not sure whether there is one or not. My idea of learning, my understanding of it, is evolving all the time. It’s being changed by each new experience and challenge.”

This tentativeness is in line with the aims of the course - it is evidence of progress in Matthew’s case because he was seeking meaning not accepting received wisdom.

At this point, for Matthew, collaboration with Mark was enhancing and extending those experiences and challenges he referred through reviewing them together.

#### 2.5.4. At the end of the programme

Asked to say something about what he had learnt after a year on the course he drew an distinction between his own approach and outcomes and those of some other students. The distinction drawn says much about Matthew's view of learning at this stage:

"...I've learnt that you never stop, you won't stop, learning...that's been the nature of some of the discussion [among the student teachers] whether we should be taught on this course...whether you can be taught to be a teacher. I don't think you can. It's a lot about how you develop as a person through the course and the approaches...you're continuously learning, but you're never going to reach a point whereby you think, 'I've done this, I've reached the zenith, I'm a teacher'. You're a teacher but you're never going to be the ultimate teacher. I think it's important for student [teachers] to realise that. I think there're still people on the course who want something prescriptive and want some kind of path, a bulldozed path, through to being a teacher at the end of it. And it just doesn't work like that."

This is evidence of Matthew's learning, that he could see the difference but, if he was right, it shows that for some the course had a low impact. It is tempting to suggest that the "bulldozed path" is the apprenticeship model but it would be important to validate that inference with evidence for those students who seek such a path (see...)

Matthew felt the course had "empowered" him to develop his teaching:

"...I'm having trouble with things like assessment...and I think it would be useful to look at things like that: issues and aspects of teaching, and try and deconstruct them and try, given the tools we've been empowered with on the course, to build our own ideas up."

The problem over assessment was the problem identified by Matthew early in the course, ie the constraint exercised by assessment on the curriculum:

"...I'm not sure what kids are at the end of an education now. A fistful of qualifications, but what do they mean? I think I would like to see some kind of meaning for the kids...at the end of their education. Rather than a certificate, to have some kind of skill/ability and as well some knowledge and



some proclivity to action...other than something which enables them just to take another step up...the educational ladder..."

For Matthew economics was not a qualification but:

"...learning to develop some critical faculty, facility, to be able to look at economic phenomena...represented to you...to be able to stand back and examine it and think who said that, why have they said it, and what does it mean?..."

These questions are of a metacognitive nature when they are used by the learner to think about a phenomenon (see Pramling, 1988)

Matthew went on to say that learning to teach economics requires student teachers "to go through the process that we're going to attempt to put our students through."

The programme appeared to be successful in Matthew's case. He felt 'qualified' to teach in the complex sense in which he conceptualised it. A conceptualisation of teaching which matches the aims of the course (conception C). He felt prepared to take on some of the issues that he had identified for himself.

## **2.6. Melissa**

### **2.6.1. At the start of the programme**

Melissa described a good teacher as one who had "an air of authority...the ones you were afraid of." They "got on with the work...and have good results at the end of it where all the children have understood what you've been going on about." She also said good teachers are "kind", "understanding" and "helped you inside and outside of school." This last point Melissa developed to include help with problems associated with "growing up."

Melissa felt it was important for teachers to be aware of broader issues with which children might be involved as a counterweight to a focus on "academic" work.

Melissa expected to enjoy a good relationship with other students and, through her teaching practice, “to learn from mistakes.” She saw teaching practice as being “thrown in at the deep end”:

“...you have a class to teach and if you can’t control then obviously you’ll have made a mistake and you’ll have to go back and ask other teachers, ‘what are the best ways of control and discipline?’”

Melissa’s view of teaching at the outset of the course focused on the teacher as the agent of teaching (conception A):

“...if all the children are restive, they won’t be listening to you, so how will they learn? If you’ve got them under control you can teach them whatever you want...it’s passing on knowledge that you know and enabling others to increase their knowledge.”

Melissa said she had the knowledge already.

In describing the process of learning to teach, Melissa was remarkably consistent. She said:

“If I don’t know how to do something, I hope I can approach someone else who can give me that information.”

She said she might ask other students on the course but...“then go to a higher person - one with more experience and knowledge...”

Melissa’s conception of teaching and learning as the transmission of information by an authority figure was a polarised one. What did she learn from the first 5 weeks of the programme’s activities?

#### 2.6.2. After the first 5 weeks

Melissa explained that she had to have “what we were undergoing...spelt out for me...” because she had not realised it at the time. She described the sense she had made of things thus:



“...you were trying to tell us that there are a variety of ways in which people learn...[and] helping us to come to terms with the way in which we learn...The way in which people perceive certain things may not be the way you look at it. The only way to find out how they see things is to bring everybody together to discuss their ideas. Then at least you know how they are thinking...There are a variety of ways of learning and you must make the topic interesting to each individual because they see things differently.”

It is not easy to decide, on the basis of this evidence, how Melissa conceptualised teaching. This interpretation would fit with a view of teaching where the focus is on the teacher as the agent of teaching, for example, in its reference to “you [the teacher] must make the topic interesting” but there is also an intention to focus on the act of teaching in the suggestion that the teacher brings “everybody together to discuss their ideas” to find out “how they are thinking. What is not clear, and was not pursued in the interview, is to what extent Melissa was paying lip-service to the latter conception (B1). Nor is it clear what she meant by “a variety of ways of learning.”

In a latter part of the interview she described learning to teach as “...finding more ways of increasing a child’s interest...” This reinforces this researcher’s view that Melissa retained a conception of teaching where the teacher as agent of teaching needed a repertoire of ‘tricks of the trade’ to maintain interest, rather like a performer maintaining the interest of her audience.

In conclusion, Melissa found collaboration unsatisfactory because it was not giving her the feedback she wanted. She wanted “criticism”:

“...if they [your partner] are not going to be critical of you, then you don’t know if you are going wrong or what...I’m always criticising everything...”

Melissa saw criticism as potentially destructive (“I don’t want to destroy my partner”) but as a means of distinguishing right from wrong in teaching. She did not see collaboration as a means of gathering evidence for reflection on the complexity of the teaching process, rather she saw it as feedback on the correctness of her teaching. This fits, of course, with a view of teaching and learning as transmission from a knowledgeable, authority figure for

reproduction by a clone as part of a simplistic process. The PGCE Economics programme was not designed to clone teachers.

There is much of what is said in the interview that could have been explained further. How Melissa's views might have been challenged is not clear. The activities of the programme to date had not really touched her. And we, as tutors, remained in the dark at this stage.

### 2.6.3. Before the second teaching practice

In this interview Melissa chose to discuss a problem she had experienced on Teaching Practice. The problem centred on the unwillingness of a pupil to accept as correct the information that Melissa was providing for him about liability to pay poll tax. Melissa felt she was failing as a teacher because she was right and he was wrong. She described her present role thus:

"They are there for this knowledge and information...[And as a teacher] you've got to be up-to-date on all your facts and, if you know you are, how can you put a stop to someone who argues against you?"

The interviewer checked Melissa's picture of a classroom with her:

"...you've got the kids there who expect you to know, expect knowledge and information, and you've got the teacher who's got knowledge and information and there's only a problem sometimes if something goes wrong with that relationship?"

Melissa replied: "If they've got a different view of knowledge."

The interviewer checked further to find that Melissa felt that her authority and knowledge were being challenged: "he thought he knew more than me." Melissa saw this type of challenge (and she generalised this to "this is what kids do in schools") as a real problem for her as a teacher given the view of teaching based on knowledge transmission that she held.

The interviewer asked Melissa to compare her view of teaching with that of the supervising teacher in school with whom she was collaborating, and



whom she had observed teaching, and to compare her view with the teaching held by the tutors at the Institute.

I: Do you think C. [the supervising teacher] sees his role and the kids' role in the same way as you do?...

M: Yes, it is [the same]. They go away with all this new knowledge but he's just got a different way of

I: Do you think I look at our relationship here in the same way as you do?

M: The teaching here is very different to classroom teaching. You let us do things and decide things for ourselves.

I: And that's different from C's classroom?

M: I think he puts an emphasis on what he prefers them to know, learn or think. At the end of the day, he always says, 'It's up to you but this is the preferred thing' in a very subtle way.

This was an important exchange because the tutors felt that the supervising teacher, C, was an example of a teacher with a conception C of teaching. He had been an associate of the Institute and spent a year working closely with the team of tutors. An interpretation of this exchange is that Melissa had been able to translate C's approach to teaching into her transmission model without difficulty. Although she claimed he did it in a different way, and it is unfortunate that she was not probed further to reveal what she meant by this. Striking is the observation that Melissa was able to separate teaching in school from teaching in the Institute. Melissa presented a tremendous challenge to the tutors. She appeared to maintain conception A.

One chink of light emerged in Melissa's last comment in the interview (and perhaps this is her attempt to explain the difference between her teaching and Salif's teaching):

"I think it is reciprocal. Sometimes they give the knowledge to him but he helps them with that knowledge to gain more knowledge."

It is just possible that Melissa had learned this (conception B) as a result of being asked to reflect on the contradictions in her view. These contradictions being:

- (1) if the teacher sees the job as passing on knowledge as information then he/she should not be surprised if its accuracy is challenged; and
- (2) teaching student teachers need not be seen differently from teaching pupils

Having said this, the lucidity of what she said in her description of Salif's teaching was not high.

#### 2.6.4. At the end of the programme

By the end of the course there was clear evidence that Melissa had shifted the focus of her attention from teacher as agent to the act of teaching but had not begun to focus on the object of teaching - not begun to think deeply about meaning ;

"When I first came on the course, I was thinking about the way we had been taught and I expected to be told how to teach. But through the course I've learnt about other ways of teaching which could be more useful. I was quite surprised at that at first, but through the course I've changed a little in that respect."

She was asked about the difference:

"Just getting kids to work in groups...I found it difficult to start with but the kids do get more out of it."

"...I tend to work as an individual so it was a big change to work with other people..."

"...I still believe you need variety - you need books to get good notes, groupwork - I'm still learning because I didn't do enough of that on TP..."



Melissa changed schools during periods of TP and was able to compare the experiences:

“...It’s so easy to fall into the pattern set by the school. On my last practice, where I was working more on my own, I had more time to think about lessons.”

She was keen to do more.

Asked about what it means to learn economics, she said:

“I know what the Institute is trying to do is get us to think about what we’re really trying to teach, trying to understand it rather than just learn it. I found that quite difficult myself.”

Asked what she would want, she said:

“I suppose getting more from the kids, rather than just telling them what economics is about...Seeing if they could come up with things with the help of my structure. If they missed some important points, I’d have to bring it in...they would be listening to each other and arguing points. After that, I got them to do a timed essay at home which helped them to bring together all the things we had been talking about and, if they wanted, they could come back to the textbook...It’s hard to get any change of views...I would look to the written work to see if they had considered other views. If they hadn’t, I suppose that’s not really learning.”

What did she mean by “considered other views?” Melissa was asked, with reference to a particular lesson, “would any view of wages be OK?” Her reply was revealing:

“Not for me. I think they should have considered arguments, any other arguments...I’d have to do my reading first to make sure that the arguments needed for the exams would appear. That’s the bottom line, really - to get through the exams...If someone said, ‘women should be paid more than men’, I would expect them to be able to back it up with reasons and to show that they were aware of other arguments.”

Although Melissa wanted interaction by this point she was not thinking about the quality of the outcome in terms of the discipline of economics. She was happy to use the exam as a proxy for economic thinking. She was not thinking about that thinking herself - which would be seeking meaning. She appeared to be willing to accept argument such as women should/should not be paid more than men without addressing the issue of whether this is worthwhile knowledge.

Melissa was able to draw a clear distinction between teaching on TP and the teaching activities at the Institute:

“On TP, I did it the easy way, standing up at the board. You don’t have to think about it...It’s more of a reality...What we did at the Institute was really worthwhile because you get really good lessons out of it but I can’t see how it relates to real teaching. Teachers don’t have time to work together in that way even though the working together focuses more on kids. You do need the sharing of ideas.”

## **2.7. Rehana**

### **2.7.1. At the start of the programme**

Rehana described her economics teacher at school as a good teacher:

“...she made you work very hard but the interest in economics came from her. She could transmit - get it across really well. She did a variety of things instead of just standing there ... You need to get the class involved...”

As far as her own development as a teacher, Rehana’s first concern was with ‘classroom control’.

“That will be the hardest thing, just to walk into a classroom and take control...to be able to put myself in the position to get respect from the pupils you’re working with when you’ve got to transmit information in a clear and logical way...”



Rehana's use of the word transmit twice might have seemed to conflict with the "need to get the class involved" but involvement here could have been seen as little more than involvement with the transmission process, ie ready and willing to receive. This was not followed up in the interview so at this stage what Rehana meant by involvement remained unclear. This view appeared to be consistent with conception A.

Another facet of her concern to develop as a teacher was to do with developing self-confidence. This was followed up by the interviewer. Rehana was relieved to see that fellow students did not seem much different to her in terms of age, self-confidence and depth of approach.

Rehana felt she would learn from mistakes with tutors telling her if she did something wrong. She felt also that observing others would be important:

"Picking out bits from other teachers and developing it into bits that work for you."

This rather brief interview concluded with Rehana summing up the job of the economics teacher in the way that she had described her own teacher's approach - a combination of making it interesting for the students with some idea of effective transmission of information. She said also that she assumed that AL students, having chosen to study the subject "should be able to take it on for themselves". This was an uncomplicated view of teaching and learning and on the face of it one that fitted clearly into the category of description of conception A.

#### 2.7.2. After the first 5 weeks

Rehana described the programme activities as encouraging the student teachers to:

"...get the class more involved. Certainly more than when I was at school..."

The term 'involvement' surfaced again here and, again, was not further explored specifically but Rehana did make a distinction between learning and understanding with reference to the activities. This distinction was explored further.

I: "You use the words learning and understanding as two different things?"

R: "I think that's crucial. I went through A levels learning things parrot-fashion and now I've been introduced to the concept of understanding. Plus, you understand what things actually mean. That's far more important."

What allowed Rehana to make this distinction? It is just possible that the experience of using evidence to review lesson outcomes was influential:

"I think the lessons have been checking the knowledge. The first one was interviewing after the lesson to check and then working steadily through so that pupils can understand the links, and to check they do understand and not just learning the stuff..."

It may be that the interviewing of pupils after the lessons made a link for Rehana between the intentions of the lesson, in terms of content, and pupils' learning (in some sense of the word). Although this had to be tempered with Rehana's next observation that "going round asking what you [the learner] got from the lesson" is not what you would do "in reality". The reality mentioned is presumably a reference to what Rehana felt happened in classrooms as a routine.

Rehana claimed to have:

"learned a lot about being a teacher since I've been here. I think it's all to do with this learning process...we all learn together - teachers and learners."

The emphasis for Rehana seemed to be on transmission and on the acts of teaching (conception B) because she described working inside a classroom thus:

"The teacher starts something off and hopes the others will pick it up. Then it will evolve from there - keep the ball rolling. The teacher can learn from the kids as well - they come up with ideas which the teacher hadn't thought of."



Evolution, 'keeping the ball rolling' and learning 'from the kids' is a more complex view of teaching than as a transmission process. Collaboration had given Rehana the opportunity to see that teachers and pupils may approach the same content differently. On observing another student teacher she had discovered:

"Emma thought she'd said something and meant something completely different from what the kids picked up."

### 2.7.3. Before the second teaching practice

By this third interview Rehana was questioning whether there was a distinction between learning and understanding. This interview came after the period of the practice so it is possible that experience of teaching in school may have led to this review of her original position on the existence of a distinction between learning and understanding.

In the second interview learning had appeared to mean to Rehana remembering. And by now after the practice she said she had a problem about what learning is. She gave an example:

"Well, this thing about still dictating. Do you learn from that? I don't know. I mean I'm not convinced you don't. I mean we were talking this morning about a couple of theories - cobweb theory. And I can remember learning how to do it. Just demand and supply going round in circles. So I obviously learnt that and I understand it. I was taught in that way so whether I actually - I'm not sure at all..."

It is not clear how Rehana intended to finish that sentence '...so whether I actually...' Perhaps she was beginning to question whether she understood it when she learnt how to do it as 'just demand and supply going round in circles'. Clearly the cobweb-model is not simply about this.

Rehana was having problems with her teaching because she found she could only transmit (conception A) to what she described as "the best able kids".

Dictation may have been seen as an acceptable part of the teaching and learning process in the TP school. Given this status by colleagues in school it

could, in the view of this student teacher, be contrasted with other acts of teaching. Asked how she was going to work on this problem, she replied that she was going to do “a lot more group work” because “you can get them to share ideas and actually make them think a lot more rather than do the thinking for them.” So Rehana had begun to consider alternative ways to organise activities (conception B).

It may be that Rehana had not begun to think about the meaning of what she intended to teach and how pupil learning could be meaningful. The following extract from the transcript illustrated this:

R: “I found costs very difficult to do group work with. And I found myself telling them what they should know...”

I: “Well, why do you want anyone to study fixed costs?”

R: “Why did I want to do it? Well, I was told to do it, wasn’t I?”

I: “Is that it? Is that the extent of the rationale for doing it? Or do you have another rationale for that?”

R: “At the time, no I didn’t”

I: “What about now?”

R: “I’m not sure it was actually valid, what I was teachinhg, at all.”

I: “So you might not understand the importance of fixed costs then?”

R: “No”.

While Rehana may have come to this conclusion, she could only have done so by beginning to question her own view of fixed costs. For this reason, it appeared to be incorrect to say that she was not focusing on meaning but, certainly, it appeared to be the case that she had some way to go in creating for herself subject matter that she could teach.



Rehana had found it impossible to collaborate with her partner. She felt that he had been critical only and had not provided evidence of pupils' responses that would allow her to develop. Rehana appeared to have noted the value of this kind of evidence in her comments in the second interview but her partner had not been willing or able to provide this information. This may have set Rehana back in her development as a teacher because she was working 'in the dark' as any teacher would be who was transmitting without setting up feedback mechanisms.

Rehana's remained a difficult view to categorise. The view of teaching as transmission was clearly present. But she had apparently begun to question her own understanding of the subject matter and to demand higher quality evidence from the classroom. Both of these aspects suggest that Rehana was beginning to turn her attention to meaning - to the object of teaching (conception C).

#### 2.7.4. At the end of the programme

It was not possible to interview Rehana at this stage.

### 2.8. Vicky

Vicky was a new graduate in PPE from Oxford University.

#### 2.8.1. At the start of the programme

The transcript of Vicky's interview at the start of the programme was bursting with ideas, few of which were followed up by the interviewer. It was difficult to do more than record them.

She claimed that being a good teacher was "all to do with respect". She had great respect for a teacher of economics about whom:

"you could really believe he knew what he was talking about...we knew he was brilliant."

So confidence in the teacher's knowledge seemed to be all important and it was something that Vicky felt she needed to develop in becoming a teacher.

"I want to have confidence in what I know. I know that I know things in economics but I don't know if I can project the confidence that a good teacher needs. Could I stand in front of the blackboard and show I know economics and get any respect while I'm teaching it?"

Vicky felt that observing teaching would be more important than reading about it.

She felt that teaching "must be a very personal thing".

She suggested that she could "learn more by learning more about myself and challenging what I think". Unfortunately, this was not followed up in the interview. This idea of "challenging what I think" sounded like metacognition. Teachers who are capable of working in this way would be likely to view teaching in a conception C way.

She felt she could learn from others by talking to them about their experiences.

The two weeks spent observing teaching in a primary school at the beginning of the programme had obviously affected Vicky. She said:

"When I first thought about teaching, I was thinking about it in a very closed way - I just want to teach economics in the way I learnt it. After just two weeks, I feel it's more of a caring role and more of a social worker role as well."

There was not much in the transcript which was about teaching and learning. No easily categorised statements using words such as 'transmit'. The closest the transcript contents came to a statement about teaching was the reference to the teacher standing in front of the blackboard and showing she knew economics. This would certainly have been consistent with a conception A of teaching but it was not much to go on. This was mainly due to insufficient probing of the meanings that Vicky ascribed to things she had said in the interview.



### 2.8.2. After the first 5 weeks

Vicky was very suspicious of the activities, in particular she was wary of the text reading exercise intended to identify students' approaches to learning and felt uncomfortable:

"By the end of it all, I think I got an idea of what you were trying to show, but I had to read a lot of things from the reading list as well to make it clear in my head. I'm not sure I entirely agree with it. I would have expected to have been given similar things with other theories of learning as well, rather than just take one."

It is just possible that Vicky discovered something about her own approach to learning through the activities of the first weeks of the programme. She seemed to imply that the activities of the programme required a 'deeper' approach than she would have expected.

"I think you were cunningly trying to teach us how kids learn. It was a way of getting us to look at how children learn in quite a scientific way. By the time we got to the end of that, I realised that. It was asking us to really think about what the children were doing."

However the text reading exercise was deemed least important of all the activities by Vicky. This is where her discomfort showed most clearly. She said:

"...[it] was a bit strange. I don't know what you were trying to do. I think now I know what you were trying to do. Rather than just giving us the article, you were doing it on us before we looked at the article. We didn't just take the answers as read but questioned them as well, like an experiment..."

"...It would have been important if we were clearer about what it was. We left at the end of the day not really knowing what we'd done."

This response needed to be compared with the responses of others. One interpretation was that Vicky's discomfort arose from the tutors' unwillingness to 'transmit' but rather to have the student teachers seek

meaning. This can be an uncomfortable process if it is new to the participants.

Vicky thought teaching together was important as an activity.

“...the James and Michelle lesson was the most useful. You really got the classes to think. You could see their thinking.”

Interviewing pupils before and after lessons did not appear valuable for the insight that it gave into pupils' thinking as some others had said but rather:

“...you learn more about who they are from their answers than what they are thinking...”

Vicky described the teachers' role as follows:

“...teachers are learning all the time...Teachers are or can be more in control of the learning - of what pupils are doing. Teachers have the responsibility and the stress.”

Questioned on what she meant by responsibility, Vicky explained:

“If they are learning from you, then you are responsible for everything you say if they are taking it all in. It's amazing really the power you may have. Just a sentence can - on teaching practice you suddenly see a pupil switch and you think 'What did I say?' Just phrase it slightly wrong and it's -”

This was not much to go on but it seemed that by this stage in the programme Vicky held a conception A of teaching economics based on the power of teacher talk but it may have been the case that the organisation of the class, implicit in Vicky's description, involved something much more complex with respect to learning.

Vicky was having difficulty with the idea and practice of collaborative review:

“If you plan a lesson which you think is good, you can't give and take with it. If you give in on part of it, it's no longer the lesson which you thought good.”



In the transcript Vicky did not refer to using evidence of pupils' learning to review the lesson in order to decide if it was good. The programme had not succeeded in convincing her of the importance of this information about pupils' meanings in developing lesson planning and teaching.

In this sense, Vicky retained a surface approach to teaching - something done by the teacher without close reference to the pupils' learning. This was a bold claim based on a short transcript but it was consistent with Vicky's response to the activity of talking to pupils before and after lessons. She said it told her more about the pupils than their thinking. Again this fitted with her earliest expressed view about teaching. At the start of the programme she had said:

"After just two weeks, I feel it's more of a caring role and more of a social worker kind of role as well."

### 2.8.3. Before the second teaching practice

In this interview, Vicky returned to the approach to learning described in the first interview - the approach which caused her discomfort in engaging in the early activities of the programme.

"...I don't like it because I feel you're setting me up for something here. In some way, I'd rather have you say 'Here are three theories, you decide'."

She was asked by the interviewer how she was learning and Vicky replied:

"I don't know. I fight against it sometimes."

Asked if she thought she learnt through "fighting", she said:

"Yes, probably through questioning it and by criticising it. I learn if I criticise something and it still holds up - if there's a plausible answer to my criticism. I don't know if that's learning or just accepting what I've learned. It's hard to know what learning is. There's learning about what economic awareness is and then learning in the sense of working out whether you agree with it."

Vicky seemed to see stimulus as information to be accepted or rejected on the basis of criteria which were unassailable and personal to her. She did not appear willing to see those criteria as capable of being challenged. She claimed in the first interview that she could learn more by challenging what she thought but so far the programme did not appear to have been successful in helping her to do this. She was clearly having difficulty with the idea of learning and teaching. In this third interview she described a lesson in a way that illustrated this point:

“The intention was to introduce demand and supply in a fashion which is not the textbook fashion in that I didn’t want to separate demand and supply. That was influenced by the work that we did right at the beginning on price. But I also wanted to base it in a real world market so we took the housing market...But because of the way the lesson split, it didn’t work out.”

What was the effect on her as a teacher?

“Well, it’s made me view it as a kind of do-it-yourself learning. You can’t make anyone else learn. You just try and present the best opportunity where pupils can get the ideas for themselves...”

Vicky related this to her own experience of being taught:

“I’ve learned a lot of things but I think I’ve learned them through trial and error having just been given dry theory dictated. So you wonder if you might not save time and energy doing it that way on the basis that some of them will learn it and some won’t.”

Vicky was asked what she meant by “get the ideas”. She referred to her own experience:

“I think I feel I’ve got something when I can transfer it easily and when I start to think through the implications for myself instead of the implications given by someone else. It’s when I start asking, ‘Hold on is this right? What about this?’ Then I must have understood something.”

What did she mean by transfer? She chose a classroom example to illustrate:



“...transfer the theory. We could be talking about a labour market and [the pupils] would think, ‘A market? I wonder if this works?’ And they might say ‘No, it doesn’t’ or, ‘with this assumption, it might work.’ ”

This reference to transfer appeared to mean learning as application. She was not clear about how knowledge might come about but Vicky seemed to want pupils to be able to apply what they knew. She had explained that she learned by being told and was then able to apply perhaps by using the ‘rules’: Is this right? What about this? Does this work? How might it be made to work? The perplexing issue for this writer was from where did Vicky get the rules, or as suggested above, the criteria which she used to accept or reject information. It harked back to a statement in the first interview where Vicky described as a good teacher someone about whom you could “really believe he knew what he was talking about”. If a person had this kind of belief in a teacher they may accept the ‘rules’ given to them by that teacher. The problem for the tutors on this programme was that they were working towards a view of teaching and learning based on metacognition where the learner would construct the rules and in a sense monitor the criteria that he or she was using to make decisions about what to accept and reject. Vicky’s view of teaching seemed still to be based in knowledge transmission and application activities (conception B).

The activities of the programme and the practice were not helping Vicky to learn. She saw learning as “working out whether you agree” with something. She saw the intentions of the teacher education programme in terms of application as follows:

“I presume what matters to you [the tutors] is not only that we know about this theory but that we go out and put it into practice.”

And Vicky found it difficult to learn in collaboration with others:

“For me it’s become a bit upsetting working with people who don’t have similar views on learning...”

It was as if Vicky’s personal success in the education system had become a constraint on her own development.

#### 2.8.4. At the end of the programme

Asked what she had learnt after a year on the programme, Vicky said:

“I know I think differently about things. I’ve learnt about teaching, I’m sure. It’s not so much learnt; it’s that I’ve come round to a different opinion. So is that learning? I don’t know. There are no answers. So, if there is not an answer to learn, do you learn?”

In this statement there appeared to be a view of learning that differed from that of accumulating knowledge in the form of answers but Vicky appeared to be willing to reframe it so as to maintain this view. She still referred to coming round to an opinion on this so she may, perhaps, have been hedging.

She was asked what was different in her thinking now:

“When I go into a classroom and talk to kids or plan the lesson, I think about what they are thinking. That’s the big difference. Not what I’m going to teach, you know ‘how can I get an A grade essay?’ So here are the notes; what are the kids thinking about and how does that match what I think about it? It’s weird. I like to know what they are thinking about now. I see the classroom differently. I see what teaching is about differently. I’m no longer thinking about going into a classroom, standing there with an overhead, or a wad of notes and telling. Now I think of it as active - talking, arguing - things like that...”

This seemed to be a record in Vicky’s own words of a move from seeing teaching as “telling” to seeing teaching as involving teacher and pupils in activities. A move from conception A to conception B.

However, Vicky foresaw problems. An “active” way of working might conflict with the way other teachers worked. An “active” way of working may not be appropriate for preparing pupils for examinations. And she still wanted a model teacher from whom she could draw confidence. She needed reassurance that she could pursue “active” teaching and ensure examination success for her pupils. She was clearly in a ‘delicate’ state perhaps not reconceptualising teaching but tentatively going along with what she thought was intended by the programme. It was as if the programme had done little



more than shake Vicky's confidence in the time-honoured approach to learning - which had served her so well - without providing an alternative approach to which she was committed in its place.

Vicky found it difficult to respond to the question 'What does it mean to learn to teach economics?'

V: ...to know about learning, to understand about learning...

I: What do you need to understand?

V: This is too difficult. I can't do it. I don't know.

I: Last question. What does it mean to learn economics?

V: To gain skills. No, I can't do it.

I: Why...?

V: ...I've spent my whole life trying to tell the teacher what they want to know. You're never going to hear what I really think, I'm sure... I'll try again.

I: Are you saying that because of your past experience, there's this tendency to give the teacher what the teacher wants?

V: Yeah. I know I do it now, but I didn't before.

Later in the transcript, Vicky said:

"I hate not being able to be told whether I've got something right or not."

It seemed that working on the programme had allowed Vicky to reflect on her view of learning and teaching producing a conflict which perhaps she alone could resolve.

“It’s just a conflict because I want to teach in one way, but if I was learning, I’d like to learn in the other because I’m good at it the other way. Does that make sense?”

The answer must be that it cannot make sense for someone seeking meaning in the teaching and learning process. The interviewer asked Vicky if she was insecure with her view of learning. She replied:

“No, I’m not insecure with my view of learning. What I’m insecure about is this. You see students know; students want to do the best they can in exams; the school wants them to. What I’m insecure about is whether my view of learning and teaching will enable them to do that. And I don’t want to fail them in that. I don’t want to fail them in their understanding either. So you’re left - if they conflict - then that’s a problem for me.”

There was powerful evidence here that Vicky’s experience of the examination system was a strong focus of her attention from the beginning to the end of the programme and that it prevented her from seeing teaching and learning in a different way. It may have been so strong an influence that she was unable to apprehend economics understanding at all. She said one of the tutors on the programme had almost convinced her that pupils could achieve examination success from understanding economics but she was not totally convinced, or to put it another way, her view of teaching and learning had not changed for the reasons given by Vicky:

“Never having seen it done. No proof of it. I couldn’t do it that way, and I did really well. And worries that the exam won’t enable kids to show their understanding.”

Development over the year of the programme appeared to involve little more than Vicky becoming conscious of what she did not understand. However, it was possible to be positive about that if only because she could see the task that lay ahead with great clarity and it was possible that her pupils would benefit from this if she could begin to resolve the conflict that she had identified. Of course, it was also possible that she did not know how and that the programme had not been successful in preparing Vicky to do so. The final exchange of the interview about Vicky’s experience of the education system as a student underlines this conclusion.



- I: Although you did well, did you not understand things?
- V: I didn't understand any economics. I've got a real problem. I'm teaching micro this year coming up and I have never understood any micro, ever. I'm sure of that.
- I: But you took the exams and passed and all that.
- V: Yeah. I did my degree but I've always just learnt the notes...I also worry about whether you can get it done in time, 3 hours, if you really want to think about something. I never thought about anything and I was always able to write 4 essays in 3 hours. And if I thought about it, I'm sure I couldn't do it.

## 2.9. Gary

### 2.9.1. At the start of the programme

Gary saw teaching as “delivering the knowledge”. He was keen to develop what he referred to as “teaching skills”:

“...organise my knowledge in a way that children can understand. Teachers should understand what they are teaching. That can be very difficult because things in life are getting very complicated...”

In particular:

“...it's really controversial teaching economics these days...not trying to impress people but to give them freedom to think so that they can manage things...”

This last statement was difficult to compare with the previous idea of “delivering the knowledge” (which sounded like conception A). Giving pupils “freedom to think” could have referred to meaningful learning which might be in conflict with the idea of teaching as ‘delivery’.

Gary's view of teaching and learning was more than that of transmission of knowledge from teacher to learner:

"...It's not only the teacher saying do this or that, the learner...should be, in some circumstances, changing places. It's two-directional..."

#### 2.9.2. After the first 5 weeks

In this interview, Gary described pupil learning thus:

"...they can just learn in a reflective way by relating their knowledge and their practical experience..."

He referred to "different ways of learning". He said that the text reading exercise had been about "trying to get us to see...different ways of learning" suggesting that the different ways were, loosely, deep and surface approaches (although this was not checked in the interview). He said:

"...the teacher is not just giving his opinion or theoretical knowledge but giving them different ways of learning."

He spoke of collaborative lesson planning:

"...if you just do it in the way we were used to doing it, it might not be effective so we have to think of different ways of teaching and giving children experiences to think about..."

And of the difference between teachers and learners:

"You can just look at it on the surface with the teachers as givers and the pupils as receivers but the opposite relationship might be true. In some cases, the teacher might learn from the pupils - a dual process going on. The teacher is not just giving but has to accept different ideas and from that he can organise and structure the delivery of knowledge."

In all this there was an emphasis or focus on the acts of teaching. It appeared clear in that last sentence. What was not clear was what Gary meant by pupils "relating their knowledge and their practical experience" to learn in a



“reflective way”. The third interview which would invite the use of an example to illustrate Gary’s view of learning might have thrown more light on this. The analysis of this third interview would be crucial in making sense of Gary’s view of teaching.

### 2.9.3. Before the second period of teaching practice

It became clear from this interview that the practical teaching experience under the supervision of teachers in school was constraining Gary’s development as a teacher.

“The method I was using in [school] was more of a didactic method and just giving them written work and asking them things that they might learn. That’s not actually based on my convictions for effective teaching but on the proposals of the teachers...” I had an alternative view of teaching: “I think integrating the world based on their experiences and relating that to what they are being told is helpful.”

He was asked what he meant by this. He said that he taught demand and supply by following the text but found that, when he attempted to assess pupils’ understanding using materials which he felt were closer to his own view of “reflective learning”, pupils did not understand. He said the pupils were routinely taught and assessed using “structured worksheets”. He felt that they had not benefitted from this. He likened the pupils experience of teaching and learning to his own which he now challenged.

“...most of my experience has been that sort of learning...transmissive way of teaching knowledge and skills...”

He illustrated the learning process he had experienced during the PGCE programme:

“If you just take the lesson on price, when we were asked to write down why the price of a bun was 20p, I found it hard. If I was asked, ‘what is price?’ I could have done it, but the other question is more related to reality. My understanding was more a conception of price but I don’t necessarily know what that price is related to - though I can define it...The conceptual understand was there but relating to reality was not.”

From this and other experiences of the programme (...“from all we’ve done...”), Gary had constructed a view of teaching:

“...the pupils are given the opportunity of interpreting their understanding rather than just relating it to very structured knowledge.”

Their phrase “interpreting their understanding” could have represented a view of metacognition. It appeared from what Gary had said that exploring this notion of teaching might not have been supported by supervising teachers during the practice.

#### 2.9.4. At the end of the programme

The transcript of the final interview with Gary was unavailable at the time of this analysis.

### 2.10. Emma

#### 2.10.1. At the start of the programme

In the first interview Emma was asked to describe a good teacher. She chose to talk about a history teacher. Her description was distinctive because it touched upon a number of aspects of a ‘good’ teacher mentioned by other student teachers but Emma was able to develop the points without prompting from the interviewer.

She explained in detail how the history teacher “grabbed” the attention of the class. She described in detail how the lessons allowed the students to participate in them and concluded:

“...you felt that you could actually contribute to what he [the teacher] thought. You felt that you could contribute to what the class thought. You didn’t sort of think you’d better make a point to look good.”



Emma did not have any problems as others had had over a conflict between the objectives of the public examination system and the aims of the history teacher that she described.

“I think he just wanted to develop our interest and develop the way we thought and approached the subject rather than wanting to put particular facts into our heads...that prepared us well for the exam which obviously loomed rather large all the time, probably too large, because it meant that whatever question was asked we were prepared to tackle it in some way even if we only had three or four facts we could mention.”

Compared with Vicky, for example, Emma’s approach to learning seemed markedly different. A deep, confident approach which allowed Emma to seek meaning in what she was experiencing. Both Vicky and Emma were successful in their Oxbridge first degrees but each had emerged from the education system with a different view of learning. Emma went on to add:

“...also it made it far more likely that after school we were going to recognise issues, see history unfolding as it were, because he [the teacher] was quite keen on that, and sort of linking in with contemporary events so you could see it unfolding...”

Asked what she thought would be developed in her when she became a teacher, Emma insisted on rephrasing the question to ‘what will we develop as we teach?’ She saw teaching as a continuous process of development. She saw development as a teacher as a reflective process involving a questioning dialogue with others and their work.

“If you went straight into a classroom, straight to teach, you could reflect on what you’d done wrong at the end of each day, and no doubt you’d learn something from it, but you wouldn’t establish a dialogue or a background to interpreting those experiences.”

Emma described her view of teaching as follows:

“I think teaching has a facilitating role. What you want to do is to allow the children to develop their interests, to find out about things. I don’t think you can force it on them. And I certainly don’t think teaching has to be about

imparting facts or knowledge to the children. I think it's more about allowing them to develop ways of thinking and, perhaps a few key concepts to enable them to think in a rational way."

Emma made a link between intentions and outcomes when she was probed on what she meant by "wrong" teaching:

"...people could be said to tackle teaching wrong if they don't achieve what they were intending to achieve. So that if someone was intending to get children to understand a certain concept at the end of a lesson, or if they were just enabling children to develop certain ways of approaching their work, if they didn't achieve that then they've done something wrong...

If you don't get there, then you want to know how you can get there.

...things are always going to change. I don't think teaching is a static thing. I don't think there are set rules by which you are going to achieve certain things.

...I think there is a diversity of teaching aims. Many of which are completely valid and people are going to have to do different things to get to those aims."

It seems possible to argue that, from the evidence of the transcript, Emma began the programme with a conception C of teaching. Thereafter it had to be very interesting to see how and what sense she made of the programme.

#### 2.10.2. After the first 5 weeks

Emma was clear about the intentions of the programme which she described as:

"...trying to make us think about the way in which people learn. The way in which they approach learning and how that affects the outcome."

Emma found that talking to pupils before and after the lessons was "extremely important":



“...it really brought home to me how difficult it is to change people’s conceptions...I thought it was quite fascinating how differently they all viewed the lesson - what they all thought that you were trying to get out of the lesson. And it’s not always clear to the pupils what our objectives are.”

But Emma’s response to the programme at this stage raised an issue for phenomenographers. She said that we were teaching the group to be “introspective”. On the face of it this could not be equated with increasing awareness. The two extracts from the transcripts which referred to introspection were:

“...everyone’s very suspicious about this phenomenography that you want to really get across to us. But that was good that you made us suspicious because I think it made us think more hard about it than if you’d gone in with a kind of an open, laid-back approach - ‘maybe you’re going to adopt phenomenography; maybe you’re not’. Once you’d aroused our suspicions, I think we probably thought things through quite a lot more. I think it’s good to teach a group to be introspective.”

The use of the term may have simply reflected the convention that ‘thinking going on in the mind/head’ so, consistent with that, thinking about the way we see things becomes ‘introspection’ when at the same time the term may equally well be describing increasing consciousness. This observation begged the question of what could allow this second interpretation to be checked. Marton (1994a) has argued that what is of interest is not teachers’ thinking but the structure of their awareness and the development of that structure. In the second extract, where Emma (1) refers to the impossibility of generalising from the way an individual thinks and (2) by referring to two levels - almost a first and second order method of studying teaching - suggests she is exploring her own experience of learning to teach, there is scope for an interpretation of introspection as awareness:

“Well, I’ll tell you how it’s been important to me. Firstly, all the time when I’ve been thinking about learning, I’ve been thinking about how I’ve learnt about learning so I can kind of learn about learning on two levels: one by observing other people; one by just thinking about how I’m doing it. Of course, you can’t generalise from the way you do things. We’re different. But it certainly gives you another example. An example that you can see in more

depth than other people. And it's always useful to try and really think through what you're doing in your own mind and introspection is a way of doing that."

And there were clues in the transcript that Emma held a relational view of learning:

"...the specific content [of the lesson]...was irrelevant. What you were really interested in is the way in which we tackle it. So it's the nature of your approach rather than the specific thing that you're getting at..."

And, finally, an extract which pulled all this together:

"...you can't be a teacher unless you're also a learner, unless you're willing to learn about what other people are thinking, how other people see the world, and be willing to address that."

The final question that was put to Emma in this interview asked her about the point of teaching in pairs. She explained how reflection in action is difficult and how reflection on action can be enhanced through collaboration:

"It's very, very difficult when you get up in front of a class. You've got so much to think about - very difficult to both do the task in hand and also reflect on the task in hand. And yet once you get out of the lesson, it's confused in your own mind as to exactly what happened because you've had so much to think about..."

How does another person help?

"...if there's two of you in the classroom, one, you can just see more things going on, and secondly, the second person can detach themselves from the precise role of getting on with the task in hand and they can observe in a much more detached fashion. It's very difficult to think about what you've done dispassionately. Someone else can help you to do that..."

And how could a student teacher learn from this collaboration?



“You always learn more, or can foresee your own thoughts more effectively if you try and talk about them and argue them through rather than to just think because you’re less likely to see more than what you say.”

### 2.10.3. Before the second period of teaching practice

Emma was asked to explain her view of learning. She said:

“Generally, I think learning is to do with getting someone to see their viewpoint more fully for what it is. Getting them to see the implications of something or getting them to see the assumptions upon which something is based. I think once they see that they may learn to stay with that viewpoint, I think they came to understand that viewpoint in a fuller sense. So, in that sense, I think they’ve learnt.”

This appeared to refer to increasing awareness. Emma contextualised her ‘definition’ of learning and in so doing described learning in terms of changing consciousness. In this extract she referred to the pupils’ responses in a class she taught.

“...they thought profit/business ruled absolutely. And I think also they thought that was the answer they should give in their economics lesson...I think that the way that they changed their minds so they came to see there were certain implications to thinking that, that meant you couldn’t interfere with things that we might think were morally unacceptable, you know, racism, etc... So I think they came to see all these implications of that.”

It might be summarised as conceptual change learning from a conception of business motivated by the desire to maximise the utility of shareholders to a conception of business motivated by the desire to maximise the utility of all the stakeholders, but Emma did not go this far in her explanation. She did identify the effect of pupils’ expectations on their awareness and the need to take account of this in her teaching. This observation that pupils ‘seek to ‘second-guess’ what the teacher wants rather than seek meaning in the classroom experience may have been a very important intervention for a student teacher’s learning (see also Mark above).

Emma said the outcome of the lesson matched her intention. And, of course, she was able to describe this outcome in terms of pupils' learning. This was an example of a student teacher making the association between intention and learning outcome. It provided evidence of the achievement of the intended outcome of the PGCE programme but underlined the complexity of the teaching process. Emma was able to help the pupils to reconceptualise the phenomenon in this lesson through a process focused on seeking meaning within context:

"I think learning took place in seeing that there was more than one aspect to that and there were things that had to be weighed up and balanced against each other...I don't know that there are really any economic truths there but I thought that was learning in an economics classroom...because it's an economic issue - because you're talking about firms and the way they behave and that's got clear implications for the allocation of resources..."

#### 2.10.4. At the end of the programme

Emma chose to teach a lesson and to review it collaboratively. This was recorded. She was not, therefore, interviewed on this occasion.

### 2.11. John

#### 2.11.1. At the start of the programme

John's experience of schooling was of some "tolerant but strict" teachers who were "very keen on the stuff they were teaching". These teachers had "got the best" out of him. He felt that these teachers had time for him and showed an interest in him. He had "respect" for these teachers.

Asked about what he thought would be developed in him in becoming a teacher. He replied that he would need to develop in order to have a "remit of authority" which he felt teachers had unlike workers in other roles that he had fulfilled in the past.

"...you have to impose yourself on a class..."



Referring to the first two weeks of observation in a primary school, he had observed that:

“...when teaching the kids the most important aspect was to get their attention so, you know, if their span of concentration lapsed the teachers had to crack the whip...”

John was concerned with “keeping the class’s attention” because “kids challenge authority” and “their span of attention isn’t that great”. This concern seemed to spring from his personal experience of being taught so too, perhaps, his suggested solution to their challenge of maintaining pupils’ attention.

“I suppose a teacher can help by being interesting, you know, making the stuff, making the material he’s teaching more interesting. Asking for views, etc. instead of just rambling on.”

At the outset of the programme there was a hint that John saw the exposing and sharing of perspectives as an important element within teaching (conception B). John did not share Vicky’s concern about the existence of a conflict of aims between his teaching and the objectives of public examinations.

“If I can get kids interested, articulate certain viewpoints they may have on the subject then I think I’m doing my job. Obviously I suppose what counts to the school is exam results but perhaps they are just synonymous anyway... You know, getting kids enthusiastic and I dare say that’s synonymous with getting good results.”

#### 2.11.2. After the first 5 weeks

In response to a question about what he thought the activities of the first 5 weeks were intended to achieve, John described a “style of class” as:

“...ask the kids what the ideas were actually...And open the debate out and see if they changed their perspective...They’d give a first impression and once we’d opened up the issues we could then ask them a second time, how they felt about the issue and see if their response had changed.”

So the early work together may have been apprehended as teaching a 'style of teaching' through which "you could challenge kids' basic beliefs".

Asked about the difference between teachers and learners, John explained:

"...the teachers' job principally is to impart knowledge. Give kids...a new insight...a learner would be someone who is trying to acquire those skills."

The juxtaposition of knowledge and insight could have been explored but it was not. Did John have a view of knowledge as acquiring insight? What did he mean by insight?

He went on to say that he considered himself a learner "trying to learn the craft of teaching". Again it would have been helpful to have explored the role of knowledge and insight in this.

John was asked to say more about the teacher and learner roles and explained that the teacher "is further down the road of development" - not "the finished article" but "just further down the road".

#### 2.11.3. Before the second period of teaching practice

John was not available for this interview.

#### 2.11.4. At the end of the programme

By the end of the programme John was able to sum up his experience of learning to teach thus:

"We've been learning to communicate with kids. In many respects, I'm like a resource for them. I have a certain degree of knowledge to impart. They have experiences, negative and positive, so if you make it interesting, they will be able to get involved."

So by the end of the year John had come full circle, maybe even taken a developmental step back to conception A ("I have a certain degree of knowledge to impart.") It is difficult to say what had been influential in the



year but John was at pains to stress the importance of the second period of teaching practice.

I: "Do you think you were learning from the teachers [in school]?"

J: "Yes. There were very different approaches. [One teacher] was very formal, a traditional structured lesson, used the blackboard a lot. [The other] was more activity based and I did more economic awareness work on Japan..."

I: "If you had to decide what student [teachers] on the course did next, what would you do?"

J: "More time in school I think. I was so far up the learning curve on this TP that I could have got a lot more from a few more weeks. You've got more experience in the classroom, you feel more confident. You could shine now. Similar things but doing it better."

It had to be questionable how much development was occurring "up the learning curve". Routines (the "craft" as John first put it) were being practised but how much sense was being made of the relationship between the teachers' intentions in terms of content and the outcomes in terms of pupils' learning was not at all clear. It was not even mentioned by John except to assert in an earlier part of the transcript that people learn economics from their own experience. This is a statement which attracts little empirical support - people learn from experience but they need to have the opportunity to think about what they learn and how they learn. John had not gained this insight.

Teaching practice may have taken John back beyond his own starting point based on his experience of being taught in school. He had recorded in an early part of the final transcript how shocked he was by what he had found in the TP school:

"I was first shocked by how different school was compared with my own experience..."

But maybe conception B was an inappropriate category at the outset.

## 2.12. Edward

### 2.12.1. At the start of the programme

Edward began the programme with an expressed need to develop “classroom management skills”, and “teaching skills” which he described as:

“Being able to put across the ideas in a way that the students will understand.”

He was asked if these two sets of skills were connected. He explained:

“...if you can’t manage the class, you won’t be able to teach them. If you can’t actually make them understand an idea, they’ll be far less likely to...pay attention. So being able to put across your ideas well is important to being able to maintain control of the class.”

This was an unproblematic view of teaching. But what did he mean by “put across your ideas well?” This did not emerge from the first interview. The control element to enable the ideas to be put across (transmission) suggested that this transcript belonged in category A.

### 2.12.2. After the first 5 weeks

Edward summed up the intentions of the programme as he had experienced it up to this stage as to:

“Get us to re-examine how we learn or our conceptions of how we learn. See if we could understand how the children were learning. To look at how the children learn. To bring us round to a more phenomenographical approach rather than a didactic approach...”

He felt that interviewing pupils before and after lessons was most important “because that gave us an idea of whether they actually shifted their views”, but he found all the activities valuable in some sense. He talked in terms of lessons being “productive” or not by which he said he meant: “didn’t seem to



give us the outcome that we'd intended". He was keen to talk about the outcomes of lessons and suggest reasons for differences in outcome.

He saw teachers as learners in the sense that:

"The teachers are learning from the results that they get with the class. If that particular lesson style, lesson plan, is successful with one group then you can try it with another group. If it's less successful with that group then you can modify it. So the teachers are always learning. So there is no real distinction between being teachers and learners."

But intriguingly he went on to add:

"The distinction comes between the teachers and the students."

He was asked what he meant. He replied:

"Teachers are often learners but the students are not."

He explained this further by saying that:

"...students view themselves as only having to acquire the information..."

He said:

"...it's up to the teacher to get them to learn rather than to acquire the information that they're going to regurgitate in the exam."

This was a difficult transcript. Edward could not be drawn further but seemed to be making a distinction between learning and acquiring information. Just exactly what was the nature of that distinction was not clear from the transcript. He may have been influenced by observations of lessons by other teachers in school. He described an observation of a practising teacher thus:

"...from this past week's experience the difference between teachers and learners is that teachers tend to view themselves as just having to lecture. This is using one example that's in school."

This was an important observation. The practitioner can support the work in the HEI or, in practice, appear to contrast with it. Edward had seen a teacher transmitting (conception A) and appeared to regret it but could he have resisted this role model? What kind of support for his own learning as a teacher would he receive from a school-based experience that portrayed teaching as knowledge transmission. This remained an important issue for the programme developers.

He was clear about the value of collaboration for review of lessons. In describing this he talked about the intention of a lesson as “trying to get the children to move.” This may have meant some kind of conceptual change but it was never clarified in the interview.

Unfortunately, Edward was not available for the two subsequent interviews.

## **2.13. Martin**

### **2.13.1. At the start of the programme**

Martin chose to talk about a teacher he had observed in the primary school. The focus of his attention had been the teacher’s ways of “holding the children’s interest” and of “controlling” them. Asked what he thought the teacher wanted from the children “in terms of learning”, he replied, “the best they could achieve themselves.”

Martin wanted to develop:

“An ability to understand children in psychology, the way they work. Understand how to put over some economics...in an interesting way. In a way they can understand and relate to.”

Martin saw himself receiving stimulus from a number of sources including “observing teaching”, “share ideas with people”, “read”, the “experience” of others on the course, “data” from others, “views” on that information or data that he had not thought of, “angle” or “perspective”:



“I might have been thinking about it from another side and, like, it would be ‘great, you’ve come up with a good idea there I hadn’t thought about. That’s true’ kind of thing.”

Reading the transcript suggested that Martin saw any source as data or information to be used or discarded as he felt it might be useful for his needs or otherwise, but quite how he thought his needs would be determined was not clear. This was a very difficult transcript to categorise and so had to be analysed in the light of all the transcripts of interviews with Martin.

#### 2.13.2. After the first 5 weeks

Martin found it difficult to say what he thought we had intended with these activities. He had found the James and Michelle lesson challenging at the level of participation. He was responding as a learner but not, it might be said, as a learner teacher. The focus of his attention was his awareness of his own learning but apparently not his awareness of teaching.

“Generally, I find it’s been shaking my notions of a lot of things over the past few weeks. Things I thought I was clear about, I realised that I wasn’t clear about...”

...And that’s something that I’ve been learning over the last few weeks. I’d never question the idea that there wouldn’t be a right answer...I’ve been questioning my ideas on what economics is about really...”

He found the collaborative teaching and interviewing of pupils most important:

“...that was useful to find out what they’d understood. Or, no, not what they’d understood, what they’d may be learned, what they’d heard us say. It’s hard to judge what they’ve understood but it was useful as a gauge to getting underneath what they’d actually taken in...”

...as for [the lessons] it was fascinating to see the way children’s minds work. At the end some of them were questioning how you make a judgement on who is better off. I don’t think they got the whole way with it but I think they did quite well...”

By this stage in the programme Martin saw teaching and learning as more than the transmission and receipt of knowledge but he was enthralled by the activities of teaching and the responses of pupils without going underneath these initial reactions to get at the meaning to consider in any detail what might be happening in the classroom and what would be the implication for teaching. He was, it appeared, a starry-eyed, enthralled observer of the action. His focus of attention was the activity of the classroom as it had been from the first interview where he reported his response to the primary school experience in the first two weeks of the course but his view of learning was learning as “absorption”.

Reading the second transcript helped make sense of the first. By the second interview, Martin was making a distinction between learning and understanding. Understanding appeared to be:

“To me somebody who’s learning, my understanding of the word now is more, just absorbing information. I learnt at university but I didn’t actually understand very much. I learnt what to put down. I learnt what the right answers were but I didn’t understand why they were the right answers or what was behind them.

I think understanding is when you can, is more than just apply, it’s when you can learn it inside out and backwards and you’ve really got the handling of what’s going on.

...by the word learning I think of the...person who’s listening, who is reading, who is understanding, through the teacher.”

It would be interesting to track Martin’s developing understanding of understanding. His view of collaboration was sharing knowledge about content (see Rehana above).

“...when you’ve got a problem you can talk about it. When you don’t understand something. I’m not hot on costs whereas I do understand money and European policy...”



Lessons were to be judged as "...that was terrible, that was awful, that was great..." This approach to review of lessons created problems for his teaching partner because it lacked an emphasis on evidence from the classroom about pupils' learning which could be used as substitute these summary judgements.

### 2.13.3. Before the second period of teaching practice

This was a revealing interview on two counts. Firstly, Martin was able to explain and exemplify his view of learning and secondly, he explained why he thought collaborative review had not been successful for him and his partner.

Martin summed up his view of learning thus:

"Perhaps change - move from one state to another based on new experience, challenging old ideas..."

This could have been a conceptual change view of learning. He went on:

"...ie, get a model, test it, if it doesn't work you can modify it, make it better, change it, move on..."

This sounds like an algorithm. If it was taught as such there would be no reason to expect understanding, or conceptual change learning, to result (see Bowden et al, 1992). Unfortunately, this point was not explored with Martin. It is a point which emerged from the transcript but it was likely that it was difficult to pick up at the time of the interview. Martin exemplified his view of learning with reference to a lesson he had taught:

"Talking about multinationals and their effects - the good things about them and the bad things...the prime example was Ireland. There was a lot of Irish kids in the school so they could do research and go home and find out what they didn't know...They were applying. They had to do some research into material. They were applying their theory. Some ideas that they had they had to evaluate for themselves whether they were true, whether they were good or bad..."

This was evidence to support the sense taken from the transcript that Martin wanted pupils to apply models and that this was the end in itself:

“...that was good because they were applying theory and practice...”

Martin did not use the word understanding, that had been distinguished from learning in the second interview. He did not see evaluation as problematic and providing a deep learning opportunity beyond comparison by examining the criteria for comparison. Or, if he did, he did not discuss it as a learning outcome of the lesson.

There was some way to go in terms of achieving the outcomes of the programme. Martin's conception of teaching had a focus on pupil activity but not on meaning. In Martin's lessons pupils were generating information (see conception B1) but not exploring the criteria for generating that information.

In the second part of the interview Martin explained the difficulty he had with lesson review:

“For ages I didn't know what I was looking for...”

Set against his responses to the activities of the first 5 weeks, the teaching practice may simply have come too soon for Martin. He may have needed more time to reflect on his own approach to learning and on the outcomes of his learning. Clearly, working with the school supervisor had not helped with this difficulty but, perhaps, for the reason that Martin was not ready to focus his attention on teaching. 'Forced' into the position of teacher, he may well have resorted to copying the models that had been paraded before him in his own schooling. In retrospect, it would have been extremely valuable to have followed this idea through. As it is, it remains speculation but it seemed important to question the timing and sequence of the practice in this case. There is, of course, no reason to assume that teaching practice will be appropriate at the same time and in the same mode for all student teachers unless a “sitting with Nellie” approach (Stones, 1989) to teacher education is adopted and then the decision about timing and appropriateness is taken for granted.



#### 2.13.4. At the end of the programme

Martin chose to teach a lesson instead of being interviewed.

### 2.14. Sarah

#### 2.14.1. At the start of the programme

When Sarah was asked to describe a good teacher she described a lecture. When asked what she thought would be developed in her in becoming a teacher she said:

“...clearer ways of expression...controlling a class...”

She said she thought it would occur by “osmosis”. By that she meant by observation and practice.

She claimed to have a “problem” of lack of patience and of demanding that “children should do what I tell them if I tell them to do it”. Observation in a primary school had heightened her consciousness of this behaviour, although she recognised it in the way she had responded to children in the past.

She felt that collaboration would be helpful because it would confirm the sense she was making of experiences. She summed up the job in the classroom as:

“Imparting information and knowledge, but a way of looking at something or for something. You can only show a child what there is. You can’t make it learn. It can only learn itself. And if it’s not willing to be taught, you can’t teach it. But you can...show it the way that it can learn...”

The distinction between teaching and showing to a person the way that they can learn was not explored further in this interview.

As it stood, this view of teaching appeared to fit category A.

#### 2.14.2. After the first 5 weeks

In this interview, it proved difficult to probe Sarah's answers. Her first response to the question of what was the intention of the first 5 weeks was "who knows?"

With prompting she said she thought talking to pupils before and after lessons was most important "if you want to try and find out what they've learnt or if they've learnt."

At this point in the interview, she referred to the teacher's role as "to impart information". And of learning she said:

"...if you're purely in the learning mode...It's purely for yourself that you've got to think about."

It is probably not overstating the case to say that the activities of the first 5 weeks of the programme appeared to have had no positive impact on Sarah's awareness of teaching. Certainly, nothing that could be elicited in the interview in any meaningful way.

She said she would look to her teaching partner for "criticism and support".

#### 2.14.3. Before the second period of teaching practice

At this stage in the programme, Sarah maintained her view of teaching and learning:

"The best you can ever do is make it available for them and let them take up whatever they are capable of doing..."

"...I think you can only show the ideas to them. You can't force them to learn it..."

She talked of an intention for a lesson as something that had "never been questioned for them" and in her description of a lesson she explained how she had set out to question something for the pupils. The distinction is crucial for learning. It was the distinction between the teacher questioning something



for the pupils and the teacher creating learning experiences through which pupils could learn to question things for themselves.

“...the recent one on public and private ownership. I hope they learned to think of the differences between them and it was not just ‘public is owned by everybody with substandard things while private is the thing to aim at’. I don’t think it is and hopefully the sheet that I designed did that...”

This sounded like the teacher imparting her view and hoping that the pupils would receive it (conception A).

Nothing in the transcript challenged this interpretation. She cited evidence that would have suggested “the sheet” did not have the effect she was looking for:

“There was a temptation [on the part of the pupils]...not to think about it...I think they understood there was a difference between public and private but whether they saw the intention behind that I don’t know. If I was doing a series of lessons, I would definitely try to have clarified that a bit more.”

Sarah had evidence that pupils may have seen things differently to the teacher:

“None of them picked up the private part (d) which was the idea of a leisure centre provided by a company for their workers - [the idea] that it wasn’t there just to make money but to provide workers with a service. Pupils just saw it as a place they could use because they were unemployed.”

Potentially, this was a powerful observation because realising that pupils do not receive the messages transmitted by the teacher makes the teaching process appear more complex and may stimulate teacher learning as the teacher seeks ways of working with pupils’ responses. Sarah had not taken up this challenge at this stage in the programme:

“Some of them definitely had different economic ideas which others didn’t. One kid brought up the idea that it was worth paying the joining fee at the club if you used it regularly because you would get your money’s worth. Most of them couldn’t see that. They just saw the fee as something that

would stop them being able to use it. I think you can only show the ideas to them. You can't force them to learn it...I don't know how I would have taken the subsequent lesson on..."

This classroom experience provided the data and the stimulus for Sarah to work with her subject supervisor and tutor on the issue that she had identified.

She applied the same view of learning to herself, in "it only works when you are ready for it." This may have been the stage in the programme when Sarah was "ready for it."

#### 2.14.4. At the end of the programme

Asked to describe something that she had learnt over the year of the programme, Sarah replied, "At the moment, nothing comes to mind."

She was prepared to say something about the experience of the teaching practice. In what she said the focus was on the pupils' general levels of attainment and not on their learning except in a very general sense:

"...I couldn't believe some of the kids were as poorly educated as they are. They've got to such a low stage. 15 year olds who could barely read or write. Coasting through ordinary lessons and as far as you could work out, doing very little anywhere."

Sarah was asked how she would "cope with that as a teacher"

"To re-think what you are giving them all the time. Something that would suit them wouldn't suit other kids. And if it was reasonable for them, their attention span was so short that they would lose track of it before it had started...they need a bit more of a one-to-one help, and if you had a smaller group, you could manage."

Later in the transcript, Sarah identified a difficulty that she had experienced in the classroom:



“When you first go into a classroom, you don’t know what to focus on - count the kids, who does the talking, who’s the pest.”

The programme had the intention of focusing student teachers’ attention on what and how the pupils were learning. This appeared to have been unsuccessful in Sarah’s case. It was also possible that it was the case that the nature of the classroom experience that Sarah had during teaching practice did not provide an environment rich enough in learning activity to allow this focus to be developed. There was some evidence for this in the transcript. Sarah said that she would have liked to see more schools. She suggested video material could be a source. She was asked what she would use in such material to “illustrate someone learning economics.”

S: I think kids asking questions related to what they were doing. Very few kids asked questions in my experience. At least, when a person asks a question, others can hear the answer as well. As long as the questions come from the kids, it helps you sort out what they do or don’t know or want to know.”

I: If the teacher provides an answer, is that then learned by the pupils?

S: “Well, at least it’s available and others can hear it. Proof of learning I always think is related to what you write down.”

Asked what “learning to teach economics” meant to her, N explained:

“Trying to look at things from the kid’s point of view - as a person with little or no experience to hook it on to. I’d never thought of that before. Even brighter kids are in that position, too. Most of them are kind of empty.”

Finally, asked about collaborative planning, Sarah emphasised:

“...the crucial thing is more resources...I feel as if I’m missing out on things somewhere.”

From the point of view of the PGCE programme designers, she was right.

## 2.15. Rod

### 2.15.1. At the start of the programme

Rod described a good A Level teacher. The interviewer put back to Rod an interpretation of what he had said with which Rod agreed:

“From what you’ve described, it [teaching] seems pretty simple and straightforward. Good notes and sit back and let the students ask questions.”

When he referred to a good year 11 teacher he mentioned “keeping the class under control.”

“...right from the start it was just his manner of speaking...he had a strong voice...that you didn’t argue with. It was in his manner...”

Asked what he thought would be developed in him in becoming a teacher, Rod identified:

“...one thing I’m going to question myself in this next year is whether I’ll have the appropriate classroom character...”

He described a classroom scenario in general terms:

“...it’s all very well saying, you know, encourage the children to be themselves and express their own characters but you can go the other way and say well that’s just going to lead to chaos in the class. It’s a kind of balance. OK, ask questions if you’re unsure of something, ask if you disagree, ask or argue but you know you’ve got to have some kind of control over it...”

By “control over it” he meant:

“...respect for the rest of the classroom...Respect for other pupils’ opinions ...letting others have their say...”

Rod saw collaborative working as follows:



“...there’s no way that any one of us is going to get it right all the time...one person might get something right and another person might get something else right and we’ll come together and chat about it and maybe we can assimilate ideas...”

He summed up the job of teaching as “to get the best out of each child.”

This was a difficult transcript to categorise because there was little reference to the content of teaching and the learning outcomes. It could be that Rod’s unproblematic view of AL teaching was an example of a transmission view of teaching and that the function of pupils’ questions was to secure information, but maybe not. This is a transcript that had to be taken with the whole set for the purpose of generating conceptions of teaching. As far as Rod’s development as a teacher was concerned, there was insufficient probing of, say, the classroom scenario that he put up as an illustration to get a feel for how he saw the relationship between teaching activities and learning outcomes. There was a clear reference to controlling pupils’ activities consistent with conceptions A and B.

#### 2.15.2. After the first 5 weeks

Rod found the first 5 weeks difficult. He saw value in some of the activities but he felt the need to be working in school much sooner “having a go.”

“...looking at the ‘before and after a lesson’...that was a good way in both instances of getting us to see how these children thought and where we stood in that...”

But, he said:

“I’d had no teaching experience really...It came across as...a very valid but very theoretical in a way...removed from the real world...within myself I was getting a bit disillusioned by it...”

Rod’s awareness of teaching must have had a strong focus on features of the classroom other than pupil learning. By this stage in the programme it was likely that the activities of the programme were not leading to reflection on classrooms because Rod did not see classrooms in this way (that is in the way

implicit in the activities of the programme - environments where pupils and teacher seek meaning for their actions). There was evidence for this conclusion in Rod's description of what his first week in school was like - getting the experience he craved:

"It's very varied and it's quite fun actually. Being in a situation where there's a class full of different people and, yeah, the idea that you've got to understand kids before you try and teach them anything or try and get them to learn something is very important I think..."

Of course, the intention of the first five weeks had not been a focus on understanding children rather it had been on pupil learning. Rod saw it in this way perhaps because of the concern he had expressed in the first interview about having an appropriate classroom "manner". This may also have accounted for his eagerness to get into a classroom to find out, and his relief at discovering this concern was unfounded. It was possible that now the focus of his attention might move towards pupils' learning of content. There was still much to be done:

"...a teacher has a certain responsibility in that he or she...is the focus for the lesson...And as such you get to somehow direct or channel the lesson to what you regard as a valid end...the teacher by no means knows everything. He's not the be all and end all..."

He had been asked what is the difference between teachers and learners:

"I felt that there is a difference but I'm not sure how to put it because I don't want to say, 'the teacher teaches the learners' because I don't believe that but I'm not sure what it is exactly that I'm trying to say."

### 2.15.3. Before the second teaching practice

Rod was asked to use an example from his teaching to explain his view of learning. He chose to refer to a lesson on advertising taught to a vocational education group.

"I got them to look at why they would want to advertise something. What the purpose was and let them develop that in their own way and let them criticise



it - pull apart almost what we just did to see why they did it...So they could be objective about what they'd done - not just see it as the right thing to do - they had reasons for and reasons against what they had just done."

The interviewer sought clarification of this last statement of the objective of the lesson(s).

I: "When you say 'what they have just done', what do you mean?"

R: "Reasons why an advert would have appealed to one set of people and not to another set of people. Rather than thinking "I like this advert, it should work, trying to be objective."

Rod's intention for the lesson(s) was not probed further in this uncharacteristically brief interview. Much could have lain behind Rod's use of "objective". He may have felt he was teaching, even transmitting, a set of criteria for being objective about making adverts appealing or he may have had a more complex view of objectivity expecting students to become aware of the way in which they experienced advertising. As Marton (1994c) put it:

"A way of experiencing something is then simply one of different aspects together constituting that which is experienced. An experience of an objective is thus not a subjective shadow of the real object, but a part of the whole which is subjective and objective at the same time."

If Rod was intending that students explored the ways of experiencing advertising (something which is liked, something which appeals, something which exploits, etc.) - objectivity as ways of experiencing an object - this lesson would have involved the students in a search for the meaning of the phenomenon 'advertising'.

For this reason, it remained unclear what view of teaching was represented by this element of the transcript. This emphasised again the importance in the interview of following up statements about the phenomenon of interest. It also showed how difficult this can be when meanings only begin to emerge on close examination of the transcript.

This could have provided the basis for reviewing these lessons with Rod.

#### 2.15.4. At the end of the programme

At the end of the programme Rod was asked to talk about something that he had learnt. He said:

“...I’ve learnt to accept how I learn something rather than just having learning as something that I’ve never been involved in. Now I feel I can stand back from how I am learning. Certainly...in school and my sixth form, I realise now that I wasn’t a part of it. It just passed me by...”

This appeared to contrast with his view of teaching and learning at the beginning of the programme. It would have been helpful in determining how and why this change was present if Rod’s attention had been taken back to his first interview.

He said also that he had learnt “all sorts of practical things”, for example working with groups, leading classes, looking at the subject from a student’s perspective.

He had something to say about education in general:

“...I feel in the PGCE that we’ve been taught to learn...I’m sure if people could be, as well as taught content, taught how they learn, I’m sure that would benefit the whole system.”

Rod was asked how he would teach what he had learnt from the year’s programme. He explained:

“...it depends what sort of people they are to start with but they’d have to go through all the things I’ve been through keeping a close eye on each of them to see the reaction to each of those things that happen - TP, assignments, things like that - and somehow directing the PGCE relative to how they reacted to these different things...I wouldn’t know where they were coming from if I didn’t do it that way...”

He discussed teaching and learning economics as follows:



“...learning in general is knowing that there is not an absolute and that there will always be questions to answer...there are economic questions about society, about the economic issues like scarcity of resources...the answers to which I don't think are absolute. They can't be absolute because the world is not perfect. So to teach economics is...the way to think round things.

...to learn to teach economics is to learn that you don't have the absolute answer...to realise that there is a process that you can go through to get some answers which...would create other questions...you do want answers...you want something to grab hold of, something that makes a difference but then you also must appreciate that difference has occurred and realise why it has occurred...seems a bit like a spiral really.”

So by the end of the programme Rod claimed he had learnt, was able to articulate that learning, and seemed to hold a conceptual change view of learning (appreciate that difference has occurred), involving a notion of metacognition (“stand back from how I am learning”).

## **2.16. Katerina**

### **2.16.1. At the start of the programme**

Katerina said that, as an observer in a class during the first two weeks of observation prior to the start of the curriculum programme, she “could see things more from the children's point of view.” She said that she had seen pupils who were not engaged in the learning activities of the classes. Far from being critical of the teacher, she said “there was absolutely no way” that she could see everything given the “pressure of time and space”. This had left her with the view that as a teacher she would need to know more about what was happening in the classroom. The apparent contradiction in what she was saying was pointed out and she was asked how this ‘ability’ to know more or, perhaps, awareness would be developed in her. She said:

“Maybe I'm being a bit naive but I think, if I'm more approachable and if I can maintain the discipline whilst at the same time allowing children to trust me and say certain things - maybe to tell me if they're bored or tell me if they don't understand.”

She saw a problem, however, because:

“It’s going to be very difficult to keep that friendly relationship and good atmosphere whilst at the same time containing anything that’s disruptive.”

Katerina described learning to be a teacher as:

“...just being able to practice a lot. And use a trial and error method...hopefully I’ll be able to use a lot of your [the tutors] experience...”

She summed up the job of teaching economics with reference to teaching A Level Economics:

“If I start off saying it’s about models and explaining a lot more background to what economics is as an approach, then obviously a bit of economic awareness - how it can affect what you do in your day-to-day life. It’s not just an abstract thing either. If I can explain that to start off with and then develop an interest in it.”

Three aspects of Katerina’s view of teaching emerged. Teaching is about relationships - friendly, knowing but disciplined. Subject-matter pedagogy is largely unproblematic - the subject can be explained in an interesting way. Finally, the quality of both explanations and relationships can be learned through experience. This was a conception A of teaching.

#### 2.16.2. After the first five weeks

The pivotal statement in this transcript seemed to be in response to the question ‘what is the difference between teachers and learners?’

“I think teachers have to provide a sort of structure and guidelines...It’s a very difficult question because the two sort of mix together in a way if you believe in active learning and you believe in pupils structuring their own work and they have to see the use of it themselves without the teacher saying this is the use of it. But at the same time...certain pupils do need a structure and to be guided along. A lot of kids need their hands held at every stage. But I don’t know if you can draw a rigid line between the two because some people learn



very independently and are able to draw things from the material whereas others just can't. So your role as a teacher would change with different individuals."

She was probed further on this and revealed:

"...what I've seen on my TP is kids very much learning off each other in groups just bouncing ideas off each other a lot...teachers have an overview...that the whole thing runs smoothly."

This was a view of teaching consistent with conception B. It had a focus on the acts of teaching. It did not explore the object of the teaching. Katerina's responses to the tasks of the first 5 weeks of the programme were consistent with this view.

She explained that the activities were an attempt to:

"...make us think of different ways of presenting lessons...Rather than traditional, you know, opening the textbook and reading the text and answering the questions without any sort of explanation or background to it."

This contrasted with the way others had experienced these activities.

Further evidence of a conception of teaching that emphasised information gathering on the part of pupils was present:

"...there's been a big emphasis on collecting...data on what their initial thoughts on these concepts are and then...after the lesson...seeing if there's any change in that information they've used."

Katerina thought the lessons taught collaboratively with tutors were most useful because "it gave us some sort of structure" but she qualified this by saying "may be it gave us too much structure". This was not the intention of collaborative teaching as an activity for student teachers. Rather the aim was to focus the teachers' attention on what was learnt. Katerina made no reference to this.

Katerina found the text exercise least useful. She felt the tutors were “putting us on the spot”.

“...a lot of people were expressing worries about reading the text...‘What will they want us to reply?’ and things like this...”

She said she thought it might have been useful for some people:

“because it made them think about the way it feels, maybe they would feel if they were pupils, just to give them something...no context...not to explain...the reasons why they’re given the material...”

Katerina had missed the point. In what she said she exemplified the ‘conditioning’ of her own education. She did at one stage in the interview emphasise “we’ve all been through degrees...” as if this qualified her to make a judgment about the usefulness of the exercise. She seemed to imply that learners must be given guidance in contradiction to her own view that she may have been given too much guidance. Her thinking about the text reading activity which emphasised deep and surface approaches to learning seemed also to be at odds with her “belief” in “active learning” and pupils “structuring their own work”. In short, Katerina was not making connections in a deep way.

### 2.16.3. Before the second teaching practice

By this stage in the programme Katerina’s view of teaching was consistent with conception B1. It focused on the acts of teaching and not the object in terms of pupils’ learning.

“We set it up as an argument between two camps so that gave them the stimulus to think about what statements mean and how we can criticise it from our point of view. Half of them were for it and half of them were against it...they learned to be critical of data and what arguments you can use to try and find out what people believe. What information means and how it can be used to support different arguments. That was our intention...I think this business of having arguments in the lesson seems to make a lot of sense at least from a motivation point of view. They were really having to think about it. They were competing but reacted in a positive way and seemed to



get a lot out of it. Then they took it out of the classroom. They were still arguing as they went out of the door.”

Of course, the argument could have been evidence of the maintenance of views untouched by the activity - not learning in a conceptual change sense. Katerina was probed about her view of learning and expressed some frustration at being interviewed in this way. She said:

“...learning is a complex process and being critical is a part of that. There are other things that come into it and that’s why you have to use a variety of methods to help these.”

“...I don’t think anyone knows how pupils learn...”

and,

“I don’t see how anyone can say ‘this is what pupils learnt’.”

She returned to the lesson description and summarised the outcome of that particular lesson:

“...our task asked them to make sense of what they already knew and how to apply it to this situation. But it doesn’t tell you whether they’ve moved anywhere.”

The whole transcript suggested that Katerina was not clear about the meaning she could attribute to the outcome of the lesson.

She felt challenged by the interview. She said she was “nervous”...about what I’m going to be asked”. She felt she had “to conform to a certain point of view” as if the interviewer had a particular answer he was seeking from Katerina. Seen in the light of the earlier interviews, it was possible to suggest that Katerina had not been touched by the activities of the course intending to help her reflect on her view of teaching and learning. She appeared to be seeking guidance. She said, and this seemed to be crucial evidence for this argument about Katerina’s view of teaching and learning:

“I just think you learn when you know what the purpose of the task is.”

But for Katerina the purpose had to be provided by the teacher and not by the learner attributing meaning to the task. This was where Katerina came in, as it were, and the activities of the programme and the practice appeared not to have led to reflection but instead frustration:

“I’m quite articulate in most situations and now I can’t think of words. I suppose people react differently to different situations. It feels unfair...”

#### 2.16.4. At the end of the programme

Katerina planned, taught and reviewed a lesson collaboratively instead of being interviewed.

### 2.17. Rebecca

Rebecca was available for only the first and third interviews.

#### 2.17.1. At the start of the programme

Rebecca saw the role of the teacher in school as “more than just teaching your subject”. She emphasised the importance of developing relationships with people - teacher with pupils, and pupils with pupils, with whom they might not otherwise relate, as a preparation for adult life.

The ‘good’ teacher she described was one to whom she was able to relate. The way he taught was “blackboard stuff...everyone in the class was doing the same thing.” She described him as “sarcastic” but she “could relate to his sense of humour.” Not everyone in the class could do so, however.

Rebecca said learning to be a teacher involved “finding out how I can put [my subject] across to the people I’m teaching.”

On collaboration, Rebecca said the tutors and student teachers “should be as a team”:



“...the tutors could...put over to us their experiences and then as we’re gaining experience ourselves we can associate it and see if we agree or disagree...And from the students together it’s sharing things that we’ve seen and what worked for us and what didn’t work for us...”

This was an uncomplicated way of teaching as transmitting knowledge, learning by experience and ensuring that the process functioned well by establishing stable and supportive personal relationships. (Conception A.)

#### 2.17.2. Before the second period of teaching practice

Rebecca described learning as “understanding” and gave an example of how she discovered that pupils had “understood” what she had taught to an A level class. She assessed their understanding by organising a game of ‘call my bluff’ - bluffs were about aspects of the AL syllabus. How did she know they understood?

R: “From what they were saying from only a few weeks ago. When they were conferring as a team, and deciding what to choose as the truth, they were saying, ‘Don’t you remember, when this happened, when that happened?’ They were able to decide who was telling the truth and who was bluffing. So from that, I think they understood what we’d been doing.”

I: “Is understanding what you mean by learning?”

R: “Yeah, I think it contributes to it.”

I: “Contributes to it - it’s not it? What else contributes to it?”

R: “Finding out about things they never knew before. Especially if they didn’t know anything about it at all, then they’d learnt something. I can’t think of anything else.”

This was a teacher focusing on the activities which allowed pupils to interact with an emphasis on learning as reproduction.

On the question of collaboration, Rebecca concluded:

“At the end of the day, you’re not in a classroom with someone else, are you? You’re by yourself...it’s a good idea...the support...but it’s not realistic.”

Teaching and learning subject matter was not problematic for Rebecca. She was far more interested in the personal interaction and, through that, management of the classroom. The latter dominated her thinking to the preclusion of concerns about the quality of the former. As long as the assessment system endorsed reproductive learning, Rebecca would be successful as a teacher in the circumstances in which she found herself during the practice. She was working with pupils in similar circumstances to those in which she had been taught herself. The opportunities for changing her view of teaching and learning were limited.

## **2.18. Gillian**

### **2.18.1. At the start of the programme**

Gillian summed up teaching from her point of view as:

“Not controlling, that’s the wrong word. Managing? ...Managing the learning process so that it goes in the direction you want without veering off in directions you don’t want - tangents...”

What had she to do in order to learn to be a teacher?

“...learning to present myself...and I want people that I’m teaching to like me...I want to be able to put things over so that it’s enjoyable so that they want to learn it.”

This appeared to be a conception A of teaching but it was a brief interview and not much was explored by the interviewer.

### **2.18.2. After the first 5 weeks**

Gillian’s interpretation of the activities of the first 5 weeks was:



“...you put us through it first [so] that we had some experience of learning in this way and then the pupils - we did it to them and we learnt from how we reacted to it and how they reacted to it...”

She found the pupils to be “more accepting”:

“They thought, ‘well, if they’re telling us that, they must be right and we’ll believe them’.”

It was very hard to imagine that Gillian could have learnt anything about teaching and learning from this experience except how easy it is to create circumstances in which pupils reproduce knowledge. This must have reinforced her conception A of teaching.

#### 2.18.3. Before the second period of teaching practice

If Gillian’s view of teaching had changed, it was firmly focused now on the act of teaching not the object. In this interview she chose to talk about a drama lesson with an economic theme. She was asked what her view of learning was for that lesson. She replied:

“I’ve got a diagram that encapsulates it all...The idea of what they had to learn would be at the centre of it...You need to start at the centre with experience...and see whatever medium the drama teacher puts on it...[the pupils] should be channelled, no, directed into what they really think about it, question that and then categorise it...Initially, they would be their own categories and thoughts but then they would have to be common categories if only for the sake of talking about and recording the work.”

It was the last statement here that gave the clue that this might have been a conception B of teaching - some activity followed by the ‘imposition’ by the teacher of a set of categories to be recorded.

#### 2.18.4. At the end of the programme

Gillian opened this interview with a statement which was helpful in providing a frame of reference for all of the interviews with her to date:

“I thought I’d learnt...to say what I mean but I haven’t. It’s only through reflection, after an interview [for a post as a teacher]. I thought I had been quite concise in saying what I meant but I wasn’t apparently. And [my tutor] agreed...”

She claimed that through the programme she had “learnt how to learn in a different way from what I did at college”.

Thereafter, Gillian was not very forthcoming in this interview.

She was asked what it means to learn to teach economics but even with probing that did not produce a response out of which much could be made:

“...We’ve learnt how to teach indirectly. I think it’s come because we know what to put across...”

What did she mean “to put across?”

“Knowing what is important...in A Level Economics it’s more obviously what I was putting across, but then in economic awareness in geography it wasn’t written down...it seemed to happen. It wasn’t quite so formal...”

Hard though it was to make sense of what Gillian was saying, it appeared to be a view of teaching based on the teacher transmitting albeit by attempting to link what she had to “put across” to what the pupils could say about the subject matter (that is, conception B).

## **2.19. Jocelyn**

### **2.19.1. At the start of the programme**

Jocelyn started the programme with an uncomplicated view of teaching. Management of classes, developing an understanding of children and developing confidence when working with large groups were prominent in her awareness of teaching, while subject matter pedagogy and pupil learning were not:



“I don’t just want to teach them some economics. I want to build up a relationship with them.”

She described how she thought she would learn to teach:

J: “...I’ll just see how my first lesson goes and you review...and you see where you went wrong.

I: “It’s all to do with practice in the classroom.”

J: “Yes, it’ll come to me.”

She was asked what, in her view, learning to be a teacher means:

“Learning how to stand up in front of a class and how to teach your subject... how to discipline a class...”

It was difficult to categorise this transcript because the interview revealed little about Jocelyn’s view of teaching beyond the surface features outlined above. She claimed “I don’t know anything yet” and it was almost possible to believe her! She discussed a class she had observed. Nothing in what she said would detract from a categorisation of her view of teaching as conception A:

“...you’ve got to manage the class first to get them ready...for learning...”

Jocelyn was surprised to know that she would be expected to collaborate in the planning, teaching and review of lessons.

#### 2.19.2. After the first 5 weeks

Collaboration had not been successful. The partners could not “agree on planning lessons”.

Jocelyn said the activities of the first weeks of the programme had been to:

“get us to see how the kids learn, how our approaches worked.”

How Jocelyn saw “kids” learning was not followed up in the interview. She did say that “you could see some learning at the end of the lesson if their views had shifted” but this sounded like she was repeating what she thought the tutor wanted to hear because it was not contextualised or elaborated in any way.

It was hard to probe too much, shown by this exchange later in the transcript:

J: “The teachers plan the lessons and use an approach that’ll get the kids to learn.”

I: “And the learners, what’s their role in this?”

J: “They’re the kids, aren’t they, the ones we try the lessons out on.”

I: “What’s their responsibility in this?”

J: “Don’t know what you mean.”

I: “The kids haven’t got any responsibility...? They’re just there to have things done to them?”

J: “I don’t know what you mean. I suppose you’ve got to see what works with them and maybe change your lessons depending on what works.”

The view of teaching described in the first interview appeared not to have developed.

### 2.19.3. Before the second teaching practice

In this interview Jocelyn chose to describe a lesson on ‘fixed and variable costs’ to explain her view of learning. She was asked why the pupils had been asked to classify costs into fixed and variable. In other words, she was asked what was the link between the teacher’s intentions and the pupils’ learning. She revealed that she had not made such a link, nor experienced such a link being forged when she was taught this subject matter herself.



J: "Costs definitely have to be broken down. I've always been taught to divide them into fixed and variable."

I: "Right. I'm just wondering why."

J: "I've never thought about it really. It's just something that you do."

This statement was a sad indictment of Jocelyn's learning to teach through "practice in the classroom". It was clearly possible to have pupils perform tasks without the teacher having a worthwhile reason for their completion. It was an example of 'going through the motions' of teaching. This extended to the rationale for the organisation of her activities:

"I think it's always better for kids to work in groups. They all get to have a say. Doesn't matter what they are learning, I think."

The programme and the practice appeared not to be making any impact on Jocelyn. How might she have been encouraged to reflect on this view of teaching? It was a view which appeared to involve in practice a mixture of tightly controlled (perhaps meaningless for all concerned) teacher directed activity and group activity undertaken for the purpose of providing pupils with an opportunity to talk to each other. Jocelyn's tutor attempted at this stage to help her see the problem with this view of teaching. This problem was closely connected with the difficulty Jocelyn had experienced earlier in the programme in seeing that pupils could have a responsibility for their own learning. By this stage in the programme Jocelyn was both taking away pupils' responsibility (the teacher led task which did not have meaning for pupils or teacher) and, at the same time, expecting pupils to be responsible for their own learning (the group activity). It was no wonder that she had experienced difficulties. Becoming aware of these conflicting approaches would have been essential.

#### 2.19.4. At the end of the programme

Jocelyn was not available for interview at the end of the programme.

## 2.20. Harshani

### 2.20.1. At the start of the programme

Harshani described learning to be a teacher as:

“...learning to be able to explain things, learning to be able to pass on knowledge in a confident manner and to be patient when people don’t understand...”

Harshani described the way a teacher whom she regarded as ‘good’ had worked with her:

“...He always told us exactly what we were going to do...We’d always have the idea of what was to come next and how it would tie in...I always thought it was easier to understand that method of teaching...”

And of the role of the tutors:

“...what I expect is for you to guide us...you’re teaching us to do what you do...”

Harshani saw this as a different teaching role to that of, say, a teacher of economics. The interviewer probed this apparent contradiction, ie that teaching economics is not also teaching the students what the economics teacher does. The distinction for Harshani seemed to turn on preparation for examinations. Teaching to teach did not involve preparation for an examination in teaching, but teaching economics did.

### 2.20.2. After the first 5 weeks

Harshani was unhappy with the collaborative lessons that she had been involved with. Referring to the pupils she said:

“...they need to have some form of explanation before you can throw them in at the deep end...like in [the price lesson] for example...They were asked the questions before it was explained to them...I certainly wouldn’t have started with the abstract beginning...”



She was asked how she would teach about price:

“I think I’d have been more specific...if you tell them exactly what you want them to understand from it, they seem to think ‘this is what I’m going to look for; this is what I will understand’...”

In saying this Harshani had stated the view of teaching the programme was designed to challenge. Harshani was restating what Mark (see above) had questioned as a result of ‘interviewing’ pupils before and after lessons. This was the observation that pupils will simply reproduce what they think the teacher wants unless care is taken through the design of the activities to ensure that the pupils engage meaningfully with the content of the lessons. The “abstract beginning” to which Harshani had referred was part of an attempt to achieve this meaningful engagement of the pupils with the content. Harshani was not seeking meaning. She really did separate learning to teach economics from learning economics as she had suggested in the first interview. The activities of the PGCE programme had not caused her to reflect on this view.

Harshani said she was learning from “doing” teaching:

“I’m learning while I’m doing it really...I felt it’s a learning experience for me being up there as well as a teaching experience. I think some of them learnt from the lesson...They seemed to get down the information and were answering questions...”

She was confirmed in this view by the supervising teachers in school:

“Speaking to other teachers they’ve said, ‘you’ll keep on learning from this’.”

The question remained, ‘learning what?’ It seemed that Harshani had been, as Lortie (1975) pointed out so many years ago, socialised into the routines of the classroom without reflecting on the meaning of what she was doing beyond explaining things and expecting pupils to reproduce the explanation. She was asked “do you think you’ll continue doing that.” “Yes,” was her reply.

On collaboration, Harshani commented at this stage:

“We’ve both got quite different views on how to teach...I know we’re going to have to compromise...Hopefully, we’ll learn which one works better...”

It was just possible that this collaboration would provide a stimulus for reflection.

### 2.20.3. Before the second teaching practice

By this stage in the programme Harshani felt she was beginning to see lessons differently. She referred to the programme task which required her to write about her experience of teaching:

“...before I wrote anything, I didn’t feel I knew anything but then I realised I was seeing lessons differently - beginning to draw things out differently; things I felt were quite important...before, I’m not sure I’d grasped anything. I think I’m now looking for things, certain responses in class, when before anything would have done. [I am] prompting and looking for particular things...Now looking back on things I wrote, I can see things I want to bring out.”

“Prompting and looking for particular things” sounded consistent with a conception B of teaching - a kind of Socratic method. Was it writing about her work that had helped Harshani to reflect on it in a way that she had not done previously?

“Reflection in a different way. Before I was not sure what I was targetting, feeling I might be writing about something that’s not very important. Now looking back on things I can see things I want to bring out.”

Collaboration may have helped, too.

“It’s quite good when you’re in a classroom. You see someone else tackling something in a different way and it’s made me think about the way I’ve approached...worksheets and group work. They can also tell you how you’re coming across. You can’t always see that yourself and that worries me. It’s important because you can think you are coming across in a certain way and



you're not at all. I'd hate to think I was standing in front of the class and losing pupils when I think I'm being very structured."

#### 2.20.4. At the end of the programme

It was not possible to interview Harshani at the end of the programme.

### 2.21. David

#### 2.21.1. At the start of the programme

"...the main thing I want to get out of this year is a fuller approach to it rather than simply seeing teaching as communicating to a class..."

What did he mean?

"...it is an approach to how you teach...which I would think, when you're teaching economics, can transform the way you look at a subject if you can bring in different ways of looking at it so that people are learning...in terms of...developing ideas, working collaboratively..."

This exemplified conception B of teaching. David rejected a conception A of teaching. He drew a comparison of English teaching with economics teaching with reference to his own school experience:

"When I was at school...English was the subject where you talked about more personal things. English teachers were much more [than other teachers] part of the life of the school and part of your development but there's no reason why economics shouldn't be."

This broader aim of developing the person David included in his summary of the job of teaching as he saw it. In summing up he appeared to place emphasis on examination success.

"...first and foremost, to get people through the exam. Second, to make that an enjoyable process and [that the pupils] feel they learnt something other

than things they're going to forget when they finish. More generally, to prepare them for life in the broadest sense."

#### 2.21.2. After the first 5 weeks

What did David think were the tutors' intentions for the activities of the first weeks of the course?

"...to think as widely as possible about what we are teaching. You could have just lined it up - this is economics, this is teaching skills...we'd have our first 7 lessons in schools planned or whatever. The impression I get is we are better equipped for the long term in teaching. We know how to stretch ourselves...but I find myself going back to other things that I didn't think we would be discussing like the actual process of people learning...I started reading that Margaret Donaldson book on children's minds before the course started. I got stuck...Now I think I must go back to that because that process is quite important in terms of teaching."

If David was aware of pupils' learning as part of teaching as an outcome of the early activities of the programme, these could have been considered successful interventions according to the aims of the programme.

Commenting on collaboration, David used the phrase "stretch yourself" again. Collaboration "forces you to stretch yourself a bit in terms of how you look at it...it's just the fact that you have to justify what you're doing." The interviewer's final comment after this statement was "good". She was right!

There was not enough in the transcript, due to technical problems with the tape recorder, to categorise this transcript, or parts of it.

#### 2.21.3. Before the second teaching practice

In this interview David described a lesson in some detail. He intended to assess the pupils' learning by using a piece of creative writing. In that he said "there was potential to look at how people justified what they were doing". He was asked to comment on whether the pupils were seeking meaning from the stimulus and tasks of the lesson. He replied that he felt the pupils were "definitely engaging in what they were doing, they were thinking about it



and the answers they were giving were a fresh way of looking at it.” All the conclusions David could be prompted to draw were tentative and referenced to the pupils’ responses.

Towards the end of this interview David was asked what and how he was learning. He replied:

“It’s difficult to describe your own learning to isolate the things. Part of it is learning what you can and can’t do...learning how much you can do with kids in the class and how they learn.”

This was a teacher who was actively seeking meaning in the classroom and interaction between himself and the pupils. It was a view of teaching that resembled conception C.

#### 2.21.4. At the end of the programme

It was not possible to interview David at the end of the programme.

### 2.22. Patrick

#### 2.22.1. At the start of the programme

Patrick summed up the job of the teacher as:

“...to stimulate the pupils to think for themselves, to better themselves if they can and, though it’s not an absolute necessity, to get an academic qualification at the end of their time in school.”

What did Patrick mean by the pupils thinking for themselves? Although he repeated the phrase, this was not followed up. As a result the transcript did not help with this question. Patrick was asked what needed to be developed in him in becoming a teacher. He mentioned “the ability to communicate” as being “very important”. Also the development of “confidence with children”. He thought this confidence would develop with practice. He had identified organisational ability and meeting “the needs of individual children” as other important aspects of teaching.

It was a very difficult transcript to categorise. The idea of thinking for oneself as a learner would be part of a conception C of learning but without contextual evidence it was not clear how this was meant exactly. Also stressed was the need to communicate. If this was all that was stressed this would have supported the conclusion that a conception A of teaching was present. It might have been tentatively concluded that conceptions A and C were present in this transcript.

#### 2.22.2. After the first 5 weeks

Patrick returned to the phrase 'think for yourself' with reference to his own learning during the first 5 weeks of the programme:

"I think you were trying to get us to think for ourselves..."

His thinking about the intention of the programme was that it was about:

"...the best way of teaching kids and conveying certain messages to kids...Using backgrounds to convey specific messages across."

He was asked to elaborate on the meaning of this last statement. He said it meant:

"Using their own personal experiences, ie the way they live - something you can apply principles to and use as an example."

He went on to argue that this was the approach of the 'James and Michelle' lesson. He described aspects of the lesson:

"...[the pupils] started off comparing their culture and James's culture in a materialistic way. At the end of the lesson, we did end up questioning the material comparison - is it sufficient? And that other indicators must be used. [Watching the] 'Michelle' video reinforced [the pupils] own personal experiences because there was something they could identify with. They started realising there are different cultures [and that] it's very difficult to compare cultures..."



Patrick had described the outcomes of the 'James and Michelle' lesson in a way which exemplified his view of teaching. In the description it was explained that the pupils were able to reflect on the meaning they attributed to their own economic actions through a comparison of aspects of two economic systems. This was consistent with the aim of the lesson. At this stage in the programme, Patrick appeared to be viewing teaching in a way consistent with conception C.

He went on to describe teaching as "an interactive process between the teacher and the pupil". He described his own learning:

"...a lot of my ideas have changed over the last four weeks...ideas which I thought were...invaluable, I'm questioning them...those particular ideas, I think they have gone forever..."

He said he had been particularly impressed by his observation of lessons in the practicum school:

"...seeing teachers still teach off the blackboard and the kids get nothing - not nothing but very little."

Patrick seemed to be making a stark contrast. Perhaps this was an extreme reaction and would have been tempered by closer observation. However, he seemed to be arguing strongly against a transmission-based notion of teaching.

### 2.22.3. Before the second teaching practice

In the third interview Patrick described something of his experience on the practicum when he found himself, despite what he had said in the earlier interview, teaching "off the blackboard"! This was followed up at the time by the tutor observing the lesson (she took it on and reorganised it). So, for a second time, Patrick took the opportunity to say in an interview, "I don't think that's the way to teach", ie teaching off the blackboard." He claimed the experience of the lesson reorganised with the tutor was salutary:

“...now, I realise it’s not the way to teach and you actually have to think about what you’re teaching and whether they’re doing any real learning and it’s all one and the same thing.”

The impression was that after the first 5 weeks Patrick was not describing his experience of the ‘James and Michelle’ lesson but, perhaps, repeating what he felt the tutor wanted to hear, or that which he could easily reproduce from others’ descriptions of the lesson. The practicum had reinforced what he claimed he had left behind until the HEI tutor intervened. The intervention must have had an impact in some sense since Patrick now chose to refer to it in describing his view of teaching and learning. He described a personal process of development:

“...it’s more difficult to teach...It’s a question of re-adjustment...”

This remained an open question. This interview provided evidence, for the tutor, of Patrick’s learning. She was then able to work with Patrick to help him see that it was not a question of the didactic or non-didactic teaching that was implied in his use of the term re-adjustment. Rather Patrick needed to seek meaning in what he was teaching. For example, the tutor followed up a lesson on migration that had been taught by Patrick and, in so doing, contrasted the meaning of migration held by the pupils (migration occurred for personal reasons) and the meaning of migration that might be the goal of an economics lesson (migration describes people functioning within the economic system). To change the pupils’ conceptions, or initial way of experiencing the phenomena migration, to a new way of experiencing it required an intervention on the part of the teacher. It was Patrick’s task then, in collaboration with the tutor and his teaching partner, to design teaching activities that might produce that change. It was seeing the goal of teaching in such a way that was the readjustment that Patrick had to make. The tutor explained that she had begun to see migration in the way she described as a result of being involved in, and seeking meaning from, the lesson that she had reviewed with Patrick. Again, this exemplified the adjustment that Patrick had to make in order to review lessons by seeking meaning for what the pupils said and the sense they made of the content of the lesson.



#### 2.22.4. At the end of the programme

Patrick chose to teach and review a lesson rather than be interviewed for a final time.

### 2.23. Nico

#### 2.23.1. At the start of the programme

At the start of the programme Nico was “hopeful” that he would “gain respect from the pupils” and “be able to teach them properly and they’ll be able to understand what I’m trying to get across”. He said “the main goal” was “enjoying the subject of economics”.

He felt that a teacher must get the respect of the pupils. In this connection, he was concerned:

“...will they listen to you? Will they not take advantage of you?”

So respect sounded like control in order to get something across. This is conception A of teaching.

Nico also used the term “mental ability” to describe pupils’ readiness to receive:

“...some kids might pick it up straight away while others in the class might not be able to and you’d have to explain it to them...more simply.”

However, in contrast, Nico summed up the job in the classroom as “to encourage them to think about the subject...an individual should think it out for themselves.” The tutor pointed to the potential difficulties that Nico might create for himself by holding two views of teaching simultaneously (if indeed he was):

Tutor: “The difficulty is then (you know you were talking about respect at the beginning) if you really want them to think for themselves, aren’t you putting yourself in a dangerous

position because you're taking the authority away, aren't you?"

This is an important point about 'ownership' of learning. Learners who take responsibility for their own learning have a different approach to those who do not. They seek meaning. They may ask metacognitive questions. The teacher who retains ownership is likely to thwart this process. At this stage, Nico was only able to respond:

Nico: "Yes, there's a balance, like most things in life. You get the respect...you know they're going to do the work."

It was to be hoped that the programme would help Nico to reflect on this view of teaching by making this conflict meaningful to him so that he was able to address it.

#### 2.23.2. After the first 5 weeks

This interview was unusually brief. Nico said that in the activities of the first weeks, the economics had not been important:

"I don't think economics was important for those lessons. We could have taught any subject...It's just the learner."

The intention in the activities to have the student teachers explore the relationship between the 'what' and the 'how' of teaching had not been achieved with Nico. The central idea that learning is always learning something and that what is learnt and how it is learnt are in some sense dialectically related was not part of Nico's consciousness. He had learnt from the activities that in order for pupils to "grasp" the "explanation" the teacher must be:

"Speaking to them in clear, simple English - not street language - but something they can understand, not slang necessarily...you've got to tailor the language. The initial explanation you'll get the core of the class understanding and there'll be a few round the fringes saying 'what's that, what's that?' and you've got to fill in the little gaps."



Nico had experienced these activities in a way that no other student teacher had. This sole emphasis on language was almost unique.

He discussed teachers as “at a higher level of learning” than pupils.

He saw the point of teaching collaboratively as for the partners to “positively criticise your teaching style” and, because he was asked about pairs of pupils working together, he saw the same positive criticism “applying there, too”.

Nico’s view of teaching was not developing.

### 2.23.3. Before the second period of teaching practice

Nico was beginning to question the way he had learnt:

“I remember a comment when we were planning the lessons together and you [the tutor] said to ask, ‘Why am I teaching this?’...I learned economics from a book and never really questioned it. Now I’m having to think what I learned in economics and to tie it to the class activities...”

He described a lesson which had raised questions for him:

“The lesson was from Development Economics with 10 year GCSE [class]. It got to the stage where we were asking, ‘Should the West, the developed world, help the less developed world with aid?’ The predominant view in the class was that we should look after our own problems first.”

Nico was intent on helping the pupils to think about, in some senses, the view they held. He found it difficult - not least because he was beginning to question whether the pupils might just be giving back to him what they thought he wanted to hear:

“Some did change their viewpoint during the lesson and when they wrote up their reports afterwards. I’m not sure how much they were doing that because I gave them hints or arguments for.”

There is a difference between changing one's mind and learning, although it may at first sight be a subtle difference. Certainly, at this stage, Nico saw these as synonymous.

"I still found it difficult to know whether those kids have learned or not, whether they had changed their minds."

Nico seemed to be concerned with opinion-forming. It is possible to hold different opinions on an issue while maintaining the same level of awareness. For example, whether to help or not to help can be held as alternative opinions while conceptualising the relationship between the developed and less-developed nations as one of helper and helped. Learning in this context would require a change in the way this relationship is conceptualised. The review of the lesson provided an opportunity for the tutor to work metacognitively with Nico's thinking about the aims of this lesson and, in so doing, help him to reconceptualise learning.

The lesson had raised other issues for Nico to do with learning:

"...understanding and being able to put it all into place as part of a big picture. If you just memorise little bits, it means nothing."

and to do with classroom activities:

"...there were arguments in groups but some weren't bothered...You even have people who were just ignoring one side. They weren't learning from the debate and wrote things from the prompt list afterwards."

This was progress indeed.

#### 2.23.4. At the end of the programme

Nico chose to teach and review a lesson instead of being interviewed.



## 2.24. Suzannah

### 2.24.1. At the start of the programme

Suzannah started the programme wanting to become “more aware”. She qualified this by saying:

“I don’t want a change in me. I want to become more outgoing.”

In the sense in which awareness is used in this study, it would involve a change in Suzannah. Awareness can have different meanings.

Suzannah was keen to have “a rapport” with her students. She summed up the job of teaching as:

“Not as getting a point of view across, but getting an idea, some basic concepts, like supply and demand...”

She said:

“it’s important for the children that the teacher can relate the subject to different areas...in relation to everyday things to get the children’s interest...I think it makes understanding the subject easier. I remember when I started economics, supply and demand, just relating it to the case of cheese made it easier to understand.”

She was asked how she expected her development as a teacher to occur. Did she expect the tutors to “tell” her? She replied:

“No, hopefully, it’ll come from me. I’m not sure how. Just by my ideas, things I see going on, that can help me explain it...”

But she commented in a later part of the interview on her experience of being taught:

“I haven’t been in a situation where I haven’t been lectured to by the teacher.”

The transcript was tentatively placed in category B.

#### 2.24.2. After the first 5 weeks

Suzannah described the intention of the activities of the first 5 weeks as:

“...you were just trying to get us to see the way in which children learn through understanding. They don’t learn by just given being facts, just learning facts, they’ve got to understand it through their own ways.”

She described the role of the teacher as she understood it:

“The pupils are there and what actually goes on in the classrooms, although it depends on the pupils’ responses and may lead in different directions, the very basis is coming from the teacher of the subject area.”

Suzannah was positive about collaboration:

“What I don’t see, Tim will be able to see, not criticise what’s going on but tell me what’s going on with the children, how they’ve reacted, how I’ve reacted to them. Have I picked up on what they’re saying? I think it’s a reflective thing...you’ve got somebody looking out from a completely different standpoint.”

She agreed with the tutor that for Suzannah “the major usefulness is when you’re performing as a teacher.”

Performance, teacher control and responsibility, through working with the responses of the pupils, put this transcript into category B.

#### 2.24.3. Before the second period of teaching practice

This interview focused on Suzannah’s description of the behaviour of a pupil with special needs. She had obviously been impressed by this pupil and needed to talk about the experience. It is not putting it too strongly to say that this had nothing to do with learning to teach economics. Of course, much could be learnt but not about teaching economics. For the latter, the context provided by the practicum was inappropriate.



#### 2.24.4. At the end of the programme

Suzannah chose to teach and review a lesson.

### 2.25. Daniel

#### 2.25.1. At the start of the programme

Daniel described learning to teach as follows:

“Well, for one thing it’s refreshing my economics for it’s a while since I’ve done that. For another it’s learning how to plan work. As far as actually presenting it and realising when people are taking it on, or when they need it explaining another way, I think I’m going to be alright instinctively, but I think as far as working out the teaching of curriculum and meeting attainment targets, that’s going to be the main learning curve.”

So this was an uncomplicated view of learning to teach requiring ‘refreshment’ of subject knowledge and some organisational knowledge. It was, similarly, an uncomplicated view of teaching:

“Helping those who want to be helped, making those who couldn’t care less want to be helped, providing the resource to do that, explaining, encouraging, motivating, telling them to shut up when they need it but not being dogmatic and overbearing...”

I do think that at some point you do have to stand back and say ‘at this point, it’s not two-way, at this point, I’m telling you. You may not like that but’.”

This view appeared to be consistent with category A.

There appeared to be a notion of routines of teaching in Daniel’s view of the way he would learn to teach. Both in observing classrooms to identify routines (the ‘how’):

“...pay attention. Work and listen and eventually just recognise the signs...as I’m working with them. I expect there’ll be aspects of the course that will be

pointers in that direction but I think as I'm working with them, that's when I'm really going to learn. I can see that even from a couple of weeks in primary [school], just started to recognise parts of it and I imagine that those weren't unusual instances but will carry across the primary and secondary divide and the geographic divide."

and in the focus of his attention (the 'what'):

"...a way of seeing inside a child's mind quickly, being able to identify the signs and use - identify the causes of behaviour and areas of interest of that child and areas of ability and be able to make the most of them."

"Being inside a child's mind" was a metaphor but it indicated a different focus on learning to that of the programme. It would be interesting to see how Daniel's view developed, if at all.

#### 2.25.2. After the first 5 weeks

Daniel was asked what he thought the tutors were trying to do in the first weeks of the programme:

"I think you were trying to show us, by putting us through it, how a certain approach to teaching would work...for example, the reading of the article...that in itself ended up as an example of the way the expectations that we had determined the way we went about the task and what we learnt from it..."

Daniel had described the intention of the text reading exercise in a way that was close to the tutors' intention but he had some doubts about the outcome for other students:

"...I'm not sure that it would be viewed as that because there was no analysis at the end..."

He went on to say:

"...it worked for me...I've got a clear understanding of what superficial learning and manipulation is as opposed to real understanding, and applying



to the real world automatically as opposed to when called upon to manipulate a model or whatever.”

Then he seemed to contradict himself when he referred to teaching:

“...I’m not sure that we wouldn’t have the same result quicker with more guidance...I can see how experience of it could give me better understanding of it...but whether I can apply that as a practical way of teaching I’m not so sure...”

The question of guidance (as its extreme being told something) versus reflection on experience begs a contradiction identified by Mark (see above) by the end of the programme.

Daniel’s assertion that he could see a difference between manipulation of a model and automatic application to ‘the real world’ was called into doubt when he thought of application to teaching.

Both of these areas provided stimulus for teaching and learning about teaching.

At this stage, Daniel’s model of teaching seemed to involve the notion of “efficiency” - perhaps some kind of input-output model.

“...whether you can...get the same results by putting in a bit more guidance I would question that. There must be a more efficient way of using that technique.”

He explained:

“...starting from where kids are at rather than what your perceptions [are] of where they’ll be, doing what you can to show up what the preconceptions are and then addressing them and using an experience-based approach can facilitate a deeper learning than would otherwise have been the case if they were learning it superficially by rote. They would internalise concepts and relate them to their own knowledge and experience and either adapting their model, rather than having a separate little piece that we can call on when required and not change their own view of the world at all. So I could see

what you were trying to do but I wasn't sure I was right, that this is what you were trying to do. I think it is but there was no confirmation, no guidance."

It was as if he was still seeking confirmation from the teacher. This in itself would suggest a view of teaching where the teacher remains in control of the subject matter (to be compared with conceptions A and B).

Daniel said that his understanding of subject matter would develop because he had to teach it:

"You have to find some way of breaking it down. Working with kids, getting them to express their ideas, maybe fumble a little bit, but not as much as we were fumbling. That makes them verbalise and express their understanding and that makes them learn better than if they receive it."

### 2.25.3. Before the second period of teaching practice

By this stage in the programme, Daniel was reviewing lessons for the sense pupils were making and for the factors in creating activities which might cause pupils to reflect on that sense they were making. He described a collaborative lesson which involved pupils in a business simulation. He wanted pupils to:

"...pick things out and look at them from their own point of view...it was our [job as teachers]...to try and turn it back on them and say why do you think that and give some examples...that didn't just look for profit maximisation/cost minimisation..."

Daniel had identified a narrow conception of business motivation as profit-maximisation as one that he wanted pupils to reflect on and in so doing to become aware of other motivational factors. It proved difficult. Daniel put this down to the effect of the simulation or game on the expectations of the pupils. The game format gave them an opportunity to behave according to their preconceptions and the format provided little that would challenge those preconceptions.

"...the whole thing was from the perspective of 'your business'...Knowing it was a game, they would have set in their minds the rules of the game and the



rules of the game were: they thought they knew how businesses had acted. That set the tone for the whole thing...”

Or, put another way, the pupils could only see this business in the way that they had experienced business - they could not get ‘inside’ this business with a changed awareness. How would he have planned this differently to take account of these problems?

“...I’d probably try and start coming from their own experience...something we could view from their point of view, starting from their own situation as near as possible and turning it so they’d already seen the other perspective first...prior to being asked to view the business from inside. Have some other stimulus which would show them another business working in a way that would surprise them - taking into account social costs and all the rest of it...”

Whether this would achieve his intention or not, Daniel was clearly attempting to work metacognitively with the pupils’ understanding of the content (conception C). The review provided an opportunity for the tutors to work with Daniel to develop his understanding.

#### 2.25.4. At the end of the programme

By the end of the programme Daniel was saying of his own learning and teaching more or less the same things that he had been saying in the second interview.

All three conceptions of teaching were present in the transcript. His view taken as a whole appeared to contain, for want of a better word, contradictions.

He used the term “introspective” to describe himself. Of teaching he said:

“...maybe I see a bit more, hear a bit more. Certainly, I read more into what’s said, wonder a bit more about what is actually being said. Look for any not immediately obvious agenda or connotations that are in there...I think I’ve learned more economics in this year than I did in the whole of my degree...”

Was he referring to increasing awareness? It was not clear from this interview. The references to teaching and learning were not contextualised. For example, he explained how he had “learned more about economics”:

“It was really having to sit down and put it into a concise form and one that I could communicate...effectively...”

He said he had learnt:

“...more about how people’s minds work...more about the way people reacted to information...how people learn, how people think...”

He described teaching as “playing the game.”

He returned to the issue of “pacing” in order to meet “the demands of the syllabus”. He said he needed to find some “short cuts” in his teaching to “speed things up”. He was asked how he would have taught what he had learnt during the year. He said that he would have done it in a very similar way although he claimed:

“I’d never have thought I would have said that in the first month or so [of the programme].”

Daniel was positive about the programme but with one major qualification:

“...things like phenomenography, the approach to economic awareness, etc. have been really useful but the one thing I would have changed...was to put in a few more comfort sessions...”

But at the same time he felt things could have been “speeded up”. This is the contradiction that emerged early in the year - was learning experiential and reflective for Daniel or a matter of guidance - ‘tell us what you want us to do’? This remained unclear to the end of the final interview.

The final question put to Daniel was ‘what does it mean to learn to teach economics?’ He said:



“To learn to recognise...learning economics...there has to be the element of just the logical progression. Being able to recognise that link has been made...that the concept can be manipulated and then...see if it’s only a concept that can be manipulated or if it’s actually made some link into the rest of the pupil’s understanding.”

This is very difficult to interpret. This view would fit with a cognitive science view of learning (and with Daniel’s references to ‘mind’) and the development of cognitive structure. This view would, strictly speaking, fall outside of the paradigm in which the phenomenographic methodology of the programme is located. It was likely that all of Daniel’s statements about teaching could be more meaningfully interpreted within the former paradigm. This may vindicate what have been referred to here as contradictions and explain why aspects of all three conceptions recur in the transcripts. A dualistic ontology provides the paradigm in which most people are culturalised into thinking. This set of transcripts of Daniel’s interviews may reinforce this point and identify a major challenge facing the approach to teacher education which informed the PGCE programme.

## **2.26. Tim**

### **2.26.1. At the start of the programme**

Tim thought that what would be developed in him was “the ability to communicate...so that you can get over what you’re trying to say”. He summed up the job in the classroom in the following statement:

“Hopefully, in the classroom, I can be someone who can tell people, try and get over a subject they need to know and try and apply it to them so they find it interesting in a way they want to learn, and try and teach them something they want to learn not something they have to learn.”

He was asked what pupils will want to learn:

“...you can apply [economics] everyday in every sort of way...and you can teach it on that sort of level. If you can...they might get more interested in it

and might want to learn about supply and demand, why things are a certain price, why it's more expensive to buy whatever..."

This was an example of conception B.

#### 2.26.2. After the first 5 weeks

Asked what he thought tutors were trying to do in the first weeks of the course, Tim replied:

"There were different levels of learning, ie the learning process...we were learning at the same time as getting the kids to learn...In the past, what I believed I learnt was a lot on face value - reading, taking in facts, figures - whereas I think the learning we have been doing, trying to get through to people, is on a deeper level, is getting on understanding of what we're learning...you get more out of it if you actually understand what you're learning rather than repeating what you're learning as in knowledge that you can repeat back..."

Tim gave an example of pupils in school learning without understanding.

"...I went to them and said 'what have you been learning in the last couple of weeks?' They said, 'elasticity of demand'. So I said 'so what is it then?' And they all [said] 'sorry?' They had a piece of paper with two graphs and they said, 'that's elastic; that's inelastic.' I said 'so what does it mean?'...They just came out and said 'we don't understand it but we know it'. So I then said 'Well, explain it to me' but they said 'we don't understand it. He was going too fast for us. We were just taking it in and writing it down'."

Tim appeared to have realised that phenomena are experienced in different ways:

"You can plan a lesson. You think you've got everything but they might not take it the way you meant them to take it. They might take it a different way."

He returned to the elasticity lesson:



“...when they asked me about it...I’d forgotten it. It took me a long while to question it, to actually say what it was. I’d learnt it the same way as them.”

Which of the activities of the first weeks of the programme was most important?

“I don’t think any were not/least important...I think I got the most right from the start. The one about conditioning...made me jump-start - kicked me into it. I always thought it difficult to know what teaching was. I’d had it and I always thought it was wrong. I didn’t know what alternative ways there were. Once I got it kick-started in my mind the rest just pushed it further and further in and made me question it all the time.”

How did he see teaching by this stage in the programme?

“...you’ve got to be able to get [the pupils] to question what you’re telling them. You could tell them anything. If they just...took it...they’re not learning...get them to...question what they’re doing and may be take that understanding and use it all the time...”

He said that he had to ask himself continually “What do you really want them to understand from that?”

On the face of it, Tim had a meaning orientation (conception C) to teaching. It would be important to see how Tim contextualised this question of what he wanted pupils to understand. Since he was questioning his work, the tutors, the school supervisor and his teaching partner, could engage meaningfully in collaboration with Tim in lesson planning. By this stage in the programme, as is clear from the cases, many student teachers were not asking such questions of their teaching.

### 2.26.3. Before the second period of teaching practice

This interview provided an example of Tim reviewing a lesson. The interviewing tutor had been involved in collaboration with Tim and his partner in the planning, teaching and review of the lesson. Unfortunately, only a small part of the interview was recorded due to technical problems. In the brief extract which follows, Tim was reviewing the lesson in question:

“...As soon as we started giving out the statements, we realised that the language of them was way out of line. We thought they were their words but what we’d done was take their words and change it into our language. So when we came to the summing up I could see what what you said was a professional criticism not a personal criticism. So...I thought it through again and I could see that the second task was too difficult for them...see the limitations in it...I still think the starting point...with the map...was relevant to their starting point. I still don’t think they had a grasp of what you and said they had...For the rest, as we were [teaching] it...I could see...they didn’t understand...in the second half of the lesson when we introduced...the poll tax and income tax I could see...they were coming out with things that they already thought and weren’t doing anything to challenge their thinking...I can see better ways of doing it now...the pupils could have got a lot more out of the lesson.”

What did he think the pupils got out of the lesson?

“...I thought they’d been able critically to look at taxation but, when I looked at it, I don’t think they did. We might have introduced some new words like ‘regressive’ as some sort of criteria for looking at taxes but I don’t think we gave them the opportunity to challenge the preconceptions they had originally about taxation...they might have learnt about regressive taxes and how to use the word ‘regression’ for taxation - I think there’s a chance for that lesson to take it somewhere else...

At this point the tape facilities broke down interrupting what appeared to be a teacher with a conception C of teaching reviewing and replanning a lesson.

#### 2.26.4. At the end of the programme

It was not possible to access the transcript of this interview.



## 2.27. Dean

### 2.27.1. At the start of the programme

Dean was not available for interview at the start of the programme.

### 2.27.2. After the first 5 weeks

What was the intention of the activities of the first weeks?

"...you were trying to get us to look at teaching in a different way...to get the children to think about the information and for them to almost produce the information for themselves from the information they've got...Or perhaps rearrange the information they've got."

He referred to a lesson:

"...at...college, the 16 year olds already had many views amongst the group themselves...it could be put together and rearranged, coaxed into a certain pattern, some idea that we might want to learn about might emerge..."

This sounded a little hit-or-miss. It was the teacher using the pupils or students as sources of information, or alternative perspectives. The outcome was not the object of concern - "idea...might emerge." It is a conception B of teaching.

Dean identified the uncertainty created by the text reading exercise that others had experienced:

"We did want some information to be given to us, some structure...that was important...but I think most people have come to the conclusion that it was a good thing."

### 2.27.3. Before the second period of teaching practice

Dean retained this view of teaching. Part of the transcript of the interview exemplified conception B and is reproduced here in full:

- I: "Has your view of learning changed as a result of your work on Teaching Practice do you think?
- D: Well, the overall picture has changed I think. I mean I saw it in (pause) you know I didn't have much experience over the last 10 years of teaching or what's happened. My experience has been teacher standing at the front and giving lectures on blackboards so in that sense it has. In terms of them talking to each other and collaborating with each other, discussing issues. So yeah, it has in that sense. Learning from each other I think.
- I: But do they learn the same things as when the teacher stands up...? I mean, in a sense, are the pupils just becoming substitutes for the teacher talking about things or something more than that?
- D: I don't know. I think just the active, speaking, discussing means that they've got deeper understanding.
- I: Does it matter what they say when they're speaking?
- D: Yeah. I mean if it's completely at a tangent, and the content is inaccurate then, yeah, I think it's got to be corrected but hopefully in the future, I don't know if I can do it now, I can guide it down the right way.
- I: Could you say just a bit about what you mean by 'inaccurate' and 'corrected'?
- D: Inaccurate in terms of like facts which are wrong. I mean like, for example, 2 and 2 is equal to 5.
- I: How about in the context of the unemployment one - what would be an example there?
- D: I don't know, it's difficult. I can't really think of one there because it is subjective. I mean the Government would say that it's the unemployment figure - that's what we're going to stand by. Somebody else from the Labour Party would put an alternative



position. They would stand by that. There's no rights and wrongs in that. Just different perspectives.

I: But doesn't economics have something to say that you would want to make sure the pupils understand accurately? You'd want to correct them if they didn't have the economics way of seeing it, I mean.

D: Yeah.

I: How did you see that in terms of those lessons on unemployment?

D: (Pause.) Could you put it another way? Is that possible?

I: Yeah. What has the economics you were trying to teach when you were teaching about unemployment?

D: Well, I was trying to lead them on to alternative, well, government interventions in terms of reducing unemployment in their terms. In terms of macro-policy, keynesian policy. Regeneration of the economy.

I: Would it have been better to have given a lecture or would you stick by your organisation if that was your intention?

D: I think it's better for them to come to those conclusions from their own knowledge of the system. A knowledge of the world, whatever.

I: And if their conclusions were inaccurate and needed to be corrected?

D: Well, I hope that in that class there was about 15 people or so. So hopefully somewhere along the line somebody's going to come up with some ideas which were relevant to the economics way of looking at the problem.

I: What's the role of the teacher in that, then? You say 'hopefully someone would come up with something'. Does the teacher have a role there? Rather than relying on hope that..., on some sort of planning.

D: Yeah.

I: Well, how did you see your role there in that lesson?

D: In terms of the questions the teacher asked. You could get perhaps more (inaudible) responses. Or, I don't want to use the word manipulate, but that kind of thing.

#### 2.27.4. At the end of the programme

Dean was asked what he had learnt by the end of the programme. He said:

"maintaining the idea of developing skills in children's minds as opposed to just filling them full of content..."

What did he mean by skills?

"Analysing content, relationships between pieces of information...trying to evaluate ideas that come to us from other people - from the media, from government, from wherever. People are interested in changing our perceptions of ourselves in our society."

He also claimed to have developed his way of relating to pupils - less "formal", more "active".

He was particularly concerned to emphasise that in teaching economics there is a place for the development and practice of "equal opportunities" policy within school.

Of his teachers, he said:

"I think I'm just trying to get within a dialogue with economic controversial issues..."

He said learning economics is:



"...trying to look at the motivations of the people who are controlling the issues in economics."

Asked what learning to teach economics means, he replied:

"...it is closely related. For me to be a teacher I've got to be a learner as well. The learning process for me over the last year in economics, as a teacher I would want to try and instil that process in the people I'd be teaching - to make them critically evaluate these issues and the motives of people in the economic system controlling them."

Dean was asked if he had been critically evaluating these issues:

"More so since I started this course. As a teacher, you really need to look at all the arguments in a lot of detail...To be more critical of everything you read..."

Dean may have come a long way as he had claimed during the year of the programme but his notion of critical evaluation seemed to be built on a theory of conspiracy - identifying the notions of those controlling the economic system - rather than a theory of metacognition - identifying how I, the learner, through my thoughts and actions contribute to the apprehension that I have of the system. It is more conception B than conception C.

## Chapter Eight

### Discussion

Three main themes emerge from the review in Chapter Two. These refer to the nature of teaching competence, its development and the role of reflective practice. The results of this study relate to all of these.

In addition, this study provides insight into the complexity of teaching both through the discovery of the outcome space of the conceptions of teaching held by the student teachers and by the analysis of individual cases of student teachers' experience of teaching. To summarise the cases further would be to detract from the richness of this material and to hide the complexity. The categories of description of conceptions of teaching are the researcher's attempt as faithfully as possible to identify the meanings that the experience of teaching held for the student teachers on the programme.

#### 1. Teaching Competence

The intended outcome of the teacher education programme was that student teachers should teach with a particular intention in mind. Their intention should be to make pupils' economic understanding the object of their reflection with pupils and teachers. This process of exploration of pupils' awareness, or meanings, should make possible conceptual change learning. Consistent with this, the programme set out to make teaching economics the object of the student teachers' reflection in order to explore their awareness



with the tutors on the programme. This was the 'partisan stance' adopted by the programme.

This study of the student teachers' awareness led to the construction of three categories of description of conceptions of teaching. Of these, conception C provides the most complex view of teaching competence. The conceptions form a hierarchy of which conception C is the top category both incorporating and extending conceptions A and B.

From this study teaching competence is seen as preparing pupils to be reflective. Reflection refers to the learner's awareness of his or her own learning, or awareness of awareness, as in metacognition. The outcome of such teaching is that the learner sees the content or phenomenon under study in a different way through changing the meaning held for that phenomenon. The approach to teaching in this way is for the teacher to work metacognitively with the learner by focusing on the learner's reflection about the content that is being studied. It requires that classroom experiences are organised so that pupils' thinking about the content of the lesson is made an object of pupils' thinking. The pupil is seen as a powerful thinker in the sense of an autonomous learner who is able to think about his or her learning.

Conception B with its emphasis on the acts of teaching and learning, in contrast with an emphasis on the object of teaching and learning, appears to be closer to the view of teaching as 'craft' knowledge. Conception B focuses on the communication process in teaching, the application of knowledge and classroom management. It does not involve pupils in the kind of powerful learning experience associated with conception C. All the aspects of conception B are important in achieving this powerful learning experience - communication, knowledge and organisation - but by themselves they do not lead to a focus on meaning since this is not seen as the object of teaching. Conception B may be closest to what the UK Government's reforms intend, that is competences rather than competence. The 9/92 specification of competences separating teaching practices from an understanding of how people learn cannot lead to a metacognitive view of teaching and learning because it divorces knowledge from the means of its acquisition. It ignores the complexity of teaching as it is found in conception C.

Conception A of teaching which emphasises the communication of information for subsequent reproduction can inhibit the development of powerful thinkers (Vicky's case illustrates this well). Beyond the establishment of control mechanisms and an information source, it requires little of the teacher that could be described as professional competence.

As Chart 6.1 shows, whilst there was some reduction in the occurrence of conception A during the programme and a movement towards conception C, conception B remained a resilient and substantially-held view. Conception B is one which places emphasis on the acts of teaching and is in practice, perhaps, one that is most easily observed.

## **2. The Development of Teaching Competence**

From this study it has emerged that the development of teaching competence as it is described here goes hand-in-hand with the development of teachers' subject matter knowledge for teaching. This knowledge develops through teachers working closely with their own and their pupils' responses to subject matter described in terms of what has, and what can be, learnt. This is a way of bridging the gap between teachers' intentions and pupils' meaningful learning. It is achieved through collaborative planning, teaching and review of classroom activities. The cases illuminate this development.

For example, with reference to Salif's case, two student teacher colleagues collaborating on a lesson discovered that it was not enough to devise a role play activity that raised issues for their pupils. If they were to engage their pupils in a process of reflection on their thinking about property developers, they had to find a way to challenge effectively some of those views. They needed stimulus material, for example, that might cause the pupils to think about why they were saying what they were saying and why they were participating in the role play from the perspective that they had chosen. Salif described this:

“...we found that it [the role play] served to reinforce their view about what business and property developers were all about - basically



money...And then we had a problem getting them to challenge these views and giving them things to get them to consider wider aims such as environmental issues and responsibilities for workers' safety...All issues which we did raise with the role play but they tried to avoid...We thought raising the issue would be enough and it wasn't...it's what they make of it...we then have to look at what they are making of it - and look for something that will challenge what they're doing with it rather than what we see that they should be doing with it...and there were opportunities..."

Salif continued:

"...In the end, it actually got them to do certain things that we wanted them to do with it - in a very negative sense. They really started asking questions about what was the use of this exercise and why were they doing it. Asking really searching questions which at the time was uncomfortable but which I was really pleased about. They were asking questions which I felt were really important...if you could have then taken on that questioning...and developed it in a more positive way, it would have been really, really good...we've learned quite a lot out of it..."

This is evidence of student teachers learning through collaboration in planning, teaching and reviewing a lesson. It caused them to ask fundamental questions of the type: what is worth knowing and learning in school/college? how does one teach that which is worth knowing? what does it mean to be a professional who is capable of teaching worthwhile knowledge? And these questions were arising through the consideration of specific subject matter.

In another case, Emma was asked to explain her view of learning. She said:

"Generally, I think learning is to do with getting someone to see their viewpoint more fully for what it is. Getting them to see the implications of something or getting them to see the assumptions upon which something is based. I think once they see that they may learn to stay with that viewpoint, I think they came to understand that viewpoint in a fuller sense. So, in that sense, I think they've learnt."

This appeared to refer to increasing awareness. Emma contextualised her 'definition' of learning and in so doing described learning in terms of changing consciousness. In this extract she referred to the pupils' responses in a class she taught.

"...they thought profit/business ruled absolutely. And I think also they thought that was the answer they should give in their economics lesson...I think that the way that they changed their minds so they came to see there were certain implications to thinking that, that meant you couldn't interfere with things that we might think were morally unacceptable, you know, racism, etc... So I think they came to see all these implications of that."

This view of learning might be summarised as conceptual change learning - moving from a conception of business motivated by the desire to maximise the utility of shareholders to a conception of business motivated by the desire to maximise the utility of all the stakeholders - but Emma did not go this far in her explanation. She did identify the effect of pupils' expectations on their awareness and the need to take account of this in her teaching. This observation that pupils seek to 'second-guess' what the teacher wants rather than seek meaning in the classroom experience may have been a very important intervention for a student teacher's learning (see also Mark's case).

Emma said the outcome of the lesson matched her intention. And, of course, she was able to describe this outcome in terms of pupils' learning. This was an example of a student teacher making the association between intention and learning outcome. It provided evidence of the achievement of the intended outcome of the programme but underlined the complexity of the teaching process. Emma was able to help the pupils to reconceptualise the phenomenon in this lesson through a process focused on seeking meaning within context:

"I think learning took place in seeing that there was more than one aspect to that and there were things that had to be weighed up and balanced against each other...I don't know that there are really any economic truths there but I thought that was learning in an economics classroom...because it's an economic issue - because you're talking



about firms and the way they behave and that's got clear implications for the allocation of resources..."

Bridging the gap between teachers' pedagogical content knowledge, or subject matter knowledge, and students' understanding of the content involves a shift of focus from self-as-teacher to pupil learning. The results of this study show that for some student teachers it is possible to achieve such a shift of focus. The cases illuminate what is relevant to bringing about this shift of focus. The following sections examine each factor in turn.

### **2.1. The relationship between approach and outcome**

Creating awareness that the approach to teaching (the 'how' of teaching ) and the outcome of teaching (the 'what' of teaching) are dialectically related is relevant.

For example, by the time of the third interview Daniel was reviewing lessons for the sense pupils were making and for the factors in creating activities which might cause pupils to reflect on that sense they were making. He described a collaborative lesson which involved pupils in a business simulation. He wanted pupils to:

"...pick things out and look at them from their own point of view...it was our [job as teachers]...to try and turn it back on them and say why do you think that and give some examples...that didn't just look for profit maximisation/cost minimisation..."

Daniel had identified a narrow conception of business motivation as profit-maximisation as one that he wanted pupils to reflect on and in so doing to become aware of other motivational factors. It proved difficult. Daniel put this down to the effect of the simulation or game on the expectations of the pupils. The game format gave them an opportunity to behave according to their preconceptions and the format provided little that would challenge those preconceptions.

"...the whole thing was from the perspective of 'your business'... Knowing it was a game, they would have set in their minds the rules of

the game and the rules of the game were: they thought they knew how businesses had acted. That set the tone for the whole thing..."

Or, put another way, the pupils could only see this business in the way that they had experienced business - they could not get 'inside' this business with a changed awareness. How would he have planned this differently to take account of these problems?

"...I'd probably try and start coming from their own experience... something we could view from their point of view, starting from their own situation as near as possible and turning it so they'd already seen the other perspective first...prior to being asked to view the business from inside. Have some other stimulus which would show them another business working in a way that would surprise them - taking into account social costs and all the rest of it..."

Whether this would achieve his intention or not, Daniel was clearly attempting to work metacognitively with the pupils' understanding of the content. The review provided an opportunity for the tutors to work with Daniel to develop his understanding.

## **2.2. Cognitive dissonance**

Highlighting the dissonance produced when this dialectical relationship appears untenable to the learner is relevant.

For example, the difficulty inherent in facilitating dialogue in the sense of neutral chairman (referential aspect of conception B2) with the intention of working metacognitively with pupils' thinking (structural aspect of conception C).

## **2.3. Communication and the reproduction of knowledge**

Creating awareness that communication in the classroom can be based on reproduction of knowledge unless pupils' meanings are consciously made the object of the teaching is relevant.



For example, interviewing pupils before and after lessons had created some cognitive dissonance for Mark because he had seen that what pupils say to the teacher may not have meaning for them. It could be a kind of lip-service, giving the teacher what the pupil perceives he wants. This was a learning opportunity for Mark because, clearly, he could not work in the way that he described at the outset of the course if he created situations where pupils simply 'repeated after the teacher'. That observation alone could put emphasis on the importance of the tasks set by the teacher if meaningful learning is to occur. Mark said:

"I find interviewing pupils before and after lessons a little confusing because seeing through what they were saying and interpreting that as something that was intrinsically theirs and something that had been fed to them was confusing to me."

#### **2.4. Using evidence of pupils' thinking**

Using evidence (collected by collaboration) of pupils' thinking to develop teachers' awareness of the meanings held by pupils is relevant.

For example, a tutor followed up a lesson on migration that had been taught by Patrick and, in so doing, contrasted the meaning of migration held by the pupils (migration occurred for personal reasons) and the meaning of migration that might be the goal of an economics lesson (migration describes people functioning within the economic system). To change the pupils' conceptions, or initial way of experiencing the phenomenon of migration, to a new way of experiencing it required an intervention on the part of the teacher. It was Patrick's task then, in collaboration with the tutor and his teaching partner, to design teaching activities that might produce that change. It was seeing the goal of teaching in this way that was the readjustment that Patrick had to make. The tutor explained that she had begun to see migration in the way she described as a result of being involved in, and seeking meaning from, the lesson that she had reviewed with Patrick. This exemplified the adjustment that Patrick had to make in order to review lessons. To be effective in the review he needed to be seeking meaning for what the pupils said and the sense they made of the content of the lesson.

## **2.5. Meaningful activities**

Relating the activities of teaching to the opportunities for the generation of meaning by pupils is relevant to teacher learning.

For example, in the cases presented here, Emma reviewing her lesson on the motivation of a business, or Mark discussing the importance of pupil involvement in a task.

## **2.6. Comparing meanings**

Comparing pupils' and teachers' meanings with the structure of meanings and approaches provided by the discipline of economics is relevant.

For example, one interview provided an example of Tim reviewing a lesson. The interviewing tutor had been involved in collaboration with Tim and his partner in the planning, teaching and review of the lesson. In the brief extract which follows, Tim was reviewing the lesson in question:

“...As soon as we started giving out the statements, we realised that the language of them was way out of line. We thought they were their words but what we'd done was take their words and change it into our language. So when we came to the summing up I could see what what you said was a professional criticism not a personal criticism. So...I thought it through again and I could see that the second task was too difficult for them...see the limitations in it...I still think the starting point...with the map...was relevant to their starting point. I still don't think they had a grasp of what you [both] said they had...For the rest, as we were [teaching] it...I could see...they didn't understand...in the second half of the lesson when we introduced...the poll tax and income tax I could see...they were coming out with things that they already thought and weren't doing anything to challenge their thinking...I can see better ways of doing it now...the pupils could have got a lot more out of the lesson.”



What did he think the pupils got out of the lesson?

“...I thought they’d been able critically to look at taxation but, when I looked at it, I don’t think they did. We might have introduced some new words like ‘regressive’ as some sort of criteria for looking at taxes but I don’t think we gave them the opportunity to challenge the preconceptions they had originally about taxation...they might have learnt about regressive taxes and how to use the word ‘regression’ for taxation - I think there’s a chance for that lesson to take it somewhere else...”

## **2.7. Assessment**

Interpreting school assessment as the assessment of meaningful learning is important for teacher learning to occur.

For example, Matthew felt the course had “empowered” him to develop his teaching but said:

“...I’m having trouble with things like assessment...and I think it would be useful to look at things like that: issues and aspects of teaching, and try and deconstruct them and try, given the tools we’ve been empowered with on the course, to build our own ideas up.”

The problem over assessment was a problem identified by Matthew early in the course, that is the constraint exercised by assessment on the curriculum:

“...I’m not sure what kids are at the end of an education now. A fistful of qualifications, but what do they mean? I think I would like to see some kind of meaning for the kids...at the end of their education. Rather than a certificate, to have some kind of skill/ability and as well some knowledge and some proclivity to action...other than something which enables them just to take another step up...the educational ladder...”

## **2.8. Class management and pupil learning**

There is also evidence from the study that the separation of the management of classrooms and the object of teaching subject matter content interferes with this shift of focus, this bridging of the gap. In some cases the classroom experiences provided by the practicum differed so markedly in this respect from that which was intended by the programme that student teachers felt able to distinguish between 'real' teaching in school and teaching as it is seen to be perceived by the HEI tutors. For Mark and Matthew, describing their classroom work in terms of involvement, motivation and learning outcomes allowed the tutor to probe the meanings they held, as the cases show. But for Simon, social roles dominated his thinking and this was reinforced by his experiences in school. In Melissa's case she admitted to taking the "easy" way which she described in terms of standing at the front using the blackboard - that was the real teaching! Only if opportunities exist for continuous review of such lessons, concentrating on evidence of outcomes in terms of pupil learning, is it likely that student teachers will be able to reflect on the relationship between managing classroom activities and pupil learning. Continuous review is only possible if school tutors work in classrooms with the student teachers actively to support that review process.

## **2.9. Collaboration during teaching practice**

The cognitive dissonance that results from a process of close collaborative review of pupil learning as the outcome of lessons generates reflection, or a process of metacognition. This allows teachers to transcend their experience of teaching and subject it to critical review. However, schools cannot always provide opportunities for such a reflective process to be put in train because that transcendence has not been achieved by the teachers in school. This observation lends support to the argument that the Government's intention to make teacher education school-based will not lead to the creation of self-reflective professionals unless the teacher educators in school have transcended their own experience and have themselves become reflective practitioners. Craft skills are unlikely to be sufficient for effective teacher education.



For example, by the third interview Rehana was questioning whether there was a distinction between learning and understanding. This interview came after the period of the practice so it was possible that experience of teaching in school may have led to this review of her original position on the existence of a distinction between learning and understanding.

In the second interview learning had appeared to mean to remembering Rehana. And by now after the practice she said she had a problem about what learning was. She gave an example:

“Well, this thing about still dictating. Do you learn from that? I don’t know. I mean I’m not convinced you don’t. I mean we were talking this morning about a couple of theories - cobweb theory. And I can remember learning how to do it. Just demand and supply going round in circles. So I obviously learnt that and I understand it. I was taught in that way so whether I actually - I’m not sure at all...”

It is not clear how Rehana intended to finish that sentence ‘...so whether I actually...’ Perhaps she was beginning to question whether she understood it when she learnt how to do it as ‘just demand and supply going round in circles’. Clearly the cobweb-model is not simply about this.

Rehana was having problems with her teaching because she found she could only transmit to what she described as “the best able kids”.

Dictation may have been seen as an acceptable part of the teaching and learning process in the TP school. Given this status by colleagues in school it could, in the view of this student teacher, be contrasted with other acts of teaching. Asked how she was going to work on this problem, she replied that she was going to do “a lot more group work” because “you can get them to share ideas and actually make them think a lot more rather than do the thinking for them.” So Rehana had begun to consider alternative ways to organise activities.

At the same time Rehana may not have begun to think about the meaning of what she intended to teach and how pupil learning could be meaningful. The practicum may not have created opportunities for this development. The following extract from the transcript illustrated this:

R: "I found costs very difficult to do group work with. And I found myself telling them what they should know..."

I: "Well, why do you want anyone to study fixed costs?"

R: "Why did I want to do it? Well, I was told to do it, wasn't I?"

I: "Is that it? Is that the extent of the rationale for doing it? Or do you have another rationale for that?"

R: "At the time, no I didn't"

I: "What about now?"

R: "I'm not sure it was actually valid, what I was teaching, at all."

I: "So you might not understand the importance of fixed costs then?"

R: "No".

On the basis of these extracts, it appeared that Rehana had some way to go in creating for herself subject matter that she could teach.

Rehana had found it impossible to collaborate with her partner. She felt that he had been critical and had not provided evidence of pupils' responses that would allow her to develop. Rehana appeared to have noted the value of this kind of evidence in her comments in the second interview but her partner had not been willing or able to provide this information. This may have set Rehana back in her development as a teacher because she was working 'in the dark' as any teacher would be who was transmitting without setting up feedback mechanisms.

The description of the development of teaching competence as it emerged from this study was in line with Winter's approach to competence which emphasised being reflective and the importance of collaborative relationships, self-knowledge and self-evaluation, and judgement involving interpretation. In general, the study shows that where these elements are absent teaching



competence (viewed as conception C) is not achieved. Indeed, teaching competence is the continued practice of these elements.

The cases provide evidence and discussion of both the value of, and the difficulty of achieving effective collaboration. It is an aspect of the professional development of teachers that is difficult to organise and which warrants further attention because as many student teachers point out teaching is still seen as a solitary pursuit - just one teacher and the class.

## **2.10. A relational view of learning**

Finally, it has to be acknowledged that developing competence as it is described here requires a relational view of learning. As Marton (1994c) has pointed out:

“... pedagogical questions rest on the methodology used to illuminate them and... methodological questions are contingent on ontological commitments... Phenomenography rests on a non-dualistic ontology ...only through this realisation can we clarify what kind of entities experiences, conceptions, understandings are... [they] refer to subject-object relations of internal nature. Our world is one which is always understood in one or in another; it cannot be defined without someone defining it. On the other hand, we cannot be without our world. However, we can focus on the object or on the subject aspect of the subject-object relations that experiences consist of. When focussing on the former, we ended up with the conclusion that an object is the structured complex of all the different ways in which it can be experienced. When focussing on the latter, we came to the conclusion that we are always aware of everything, although the way in which we are aware is situationally variable. Both these conclusions may seem highly counter-intuitive. However, what they imply is that we should explore - without too many preconceived ideas - what the world we experience is like, on the one hand, and what our way of experiencing the world is like, on the other hand. And of course, these are not two things. They are one.” (p 100)

There is evidence from this study to show that this non-dualistic ontological commitment cannot be taken for granted and that the creation of cognitive dissonance through challenging the existing commitment can be uncomfortable for students and demanding of the teacher.

For example, asked what she had learnt after a year on the programme, Vicky said:

“I know I think differently about things. I’ve learnt about teaching, I’m sure. It’s not so much learnt; it’s that I’ve come round to a different opinion. So is that learning? I don’t know. There are no answers. So, if there is not an answer to learn, do you learn?”

In this statement there appeared to be a view of learning that differed from that of accumulating knowledge in the form of answers but Vicky appeared to be willing to reframe it so as to maintain this view. She still referred to coming round to an opinion on this so she may, perhaps, have been hedging.

She was asked what was different in her thinking now:

“When I go into a classroom and talk to kids or plan the lesson, I think about what they are thinking. That’s the big difference. Not what I’m going to teach, you know ‘how can I get an A grade essay?’ So here are the notes; what are the kids thinking about and how does that match what I think about it? It’s weird. I like to know what they are thinking about now. I see the classroom differently. I see what teaching is about differently. I’m no longer thinking about going into a classroom, standing there with an overhead, or a wad of notes and telling. Now I think of it as active - talking, arguing - things like that...”

This seemed to be a record in Vicky’s own words of a move from seeing teaching as “telling” to seeing teaching as involving teacher and pupils in activities. However, Vicky foresaw problems. An “active” way of working might conflict with the way other teachers worked. An “active” way of working may not be appropriate for preparing pupils for examinations. And she still wanted a model teacher from whom she could draw confidence. She needed reassurance that she could pursue “active” teaching and ensure examination success for her pupils. She was clearly in a ‘delicate’ state



perhaps not reconceptualising teaching but tentatively going along with what she thought was intended by the programme. It was as if the programme had done little more than shake Vicky's confidence in the time-honoured approach to learning - which had served her so well - without providing in its place an alternative approach to which she was committed.

Vicky found it difficult to respond to the question 'What does it mean to learn to teach economics?'

V: "...to know about learning, to understand about learning..."

I: "What do you need to understand?"

V: "This is too difficult. I can't do it. I don't know."

I: "Last question. What does it mean to learn economics?"

V: "To gain skills. No, I can't do it."

I: "Why...?"

V: "...I've spent my whole life trying to tell the teacher what they want to know. You're never going to hear what I really think, I'm sure... I'll try again."

I: "Are you saying that because of your past experience, there's this tendency to give the teacher what the teacher wants?"

V: "Yeah. I know I do it now, but I didn't before."

Later in the transcript, Vicky said:

"I hate not being able to be told whether I've got something right or not."

It seemed that working on the programme had allowed Vicky to reflect on her view of learning and teaching producing a conflict which perhaps she alone could resolve.

“It’s just a conflict because I want to teach in one way, but if I was learning, I’d like to learn in the other because I’m good at it the other way. Does that make sense?”

The answer must be that it cannot make sense for someone seeking meaning in the teaching and learning process. The interviewer asked Vicky if she was insecure with her view of learning. She replied:

“No, I’m not insecure with my view of learning. What I’m insecure about is this. You see students know; students want to do the best they can in exams; the school wants them to. What I’m insecure about is whether my view of learning and teaching will enable them to do that. And I don’t want to fail them in that. I don’t want to fail them in their understanding either. So you’re left - if they conflict - then that’s a problem for me.”

There was powerful evidence here that Vicky’s experience of the examination system was a strong focus of her attention from the beginning to the end of the programme and that it prevented her from seeing teaching and learning in a different way. It may have been so strong an influence that she was unable to apprehend economics understanding at all. She said one of the tutors on the programme had almost convinced her that pupils could achieve examination success from understanding economics but she was not totally convinced, or to put it another way, her view of teaching and learning had not changed for the reasons given by Vicky:

“Never having seen it done. No proof of it. I couldn’t do it that way, and I did really well. And worries that the exam won’t enable kids to show their understanding.”

Development over the year of the programme appeared to involve little more than Vicky becoming conscious of what she did not understand. However, it was possible to be positive about that if only because she could see the task that lay ahead with great clarity and it was possible that her pupils would benefit from this if she could begin to resolve the conflict that she had identified. Of course, it was also possible that she did not know how and that the programme had not been successful in preparing Vicky to do so. The



final exchange of the interview about Vicky's experience of the education system as a student underlines this conclusion.

I: "Although you did well, did you not understand things?"

V: "I didn't understand any economics. I've got a real problem. I'm teaching micro this year coming up and I have never understood any micro, ever. I'm sure of that."

I: "But you took the exams and passed and all that."

V: "Yeah. I did my degree but I've always just learnt the notes...I also worry about whether you can get it done in time, 3 hours, if you really want to think about something. I never thought about anything and I was always able to write 4 essays in 3 hours. And if I thought about it, I'm sure I couldn't do it."

In another example, in contrast to the difficulties experienced by Vicky, student teacher Emma's approach to learning seemed markedly different - a deep, confident approach which allowed Emma to seek meaning in what she was experiencing. Both Vicky and Emma were successful in their Oxbridge first degrees but each had emerged from the education system with a different view of learning. Asked what she thought would be developed in her when she became a teacher, Emma insisted on rephrasing the question to 'what will we develop as we teach?' She saw teaching as a continuous process of development. She saw development as a teacher as a reflective process involving a questioning dialogue with others and their work.

"If you went straight into a classroom, straight to teach, you could reflect on what you'd done wrong at the end of each day, and no doubt you'd learn something from it, but you wouldn't establish a dialogue or a background to interpreting those experiences."

Emma described her view of teaching as follows:

"I think teaching has a facilitating role. What you want to do is to allow the children to develop their interests, to find out about things. I don't think you can force it on them. And I certainly don't think

teaching has to be about imparting facts or knowledge to the children. I think it's more about allowing them to develop ways of thinking and, perhaps a few key concepts to enable them to think in a rational way."

Emma made a link between intentions and outcomes when she was probed on what she meant by "wrong" teaching:

"...people could be said to tackle teaching wrong if they don't achieve what they were intending to achieve. So that if someone was intending to get children to understand a certain concept at the end of a lesson, or if they were just enabling children to develop certain ways of approaching their work, if they didn't achieve that then they've done something wrong...

If you don't get there then you want to know how you can get there.

...things are always going to change. I don't think teaching is a static thing. I don't think there are set rules by which you are going to achieve certain things.

...I think there is a diversity of teaching aims. Many of which are completely valid and people are going to have to do different things to get to those aims."

It seems possible to argue that, from the evidence of the transcript, Emma began the programme with a conception C of teaching:

"...you can't be a teacher unless you're also a learner, unless you're willing to learn about what other people are thinking, how other people see the world, and be willing to address that."

The contrast between Vicky and Emma provides evidence of what underpins the development of teaching competence - teachers must see themselves as learners.



### 3. Reflective Practice

It is possible from the results of this study to comment on the notion of the reflective teacher. Teachers holding any conception could be described as reflective teachers in an interview or an exchange about teaching if the interview or exchange is conducted successfully in a phenomenographic sense because the intention is to make the subject reflective in order to explore awareness. So it is not the case that student teachers in this study holding a particular conception were any more or less reflective than teachers holding a different conception when engaged in a dialogue about teaching. But it may be that those student teachers with a conception C of teaching had, through developing awareness, learnt to explore meanings - their own understanding of the phenomenon of teaching economics and their pupils' understanding of economic phenomena - and in so doing they had become capable of 'self-reflection' in the way that Bengtsson (1995) has described it. He has reminded us that with self-reflection (which he distinguishes from thinking):

"...it is possible for the practitioner to get self-knowledge of him- or herself and his or her practice. This kind of self-knowledge has at least three different kinds of pedagogical value: (1) With the help of self-reflection the teacher can learn about his or her own teaching practice. (2) Self-knowledge makes it possible for the teacher to take a position on his or her own practice. (3) Self-knowledge makes it also possible for the teacher to teach about his or her own teaching.

Although the teacher may be highly competent without ever having used self-reflection, he or she can never achieve these three points without the distancing function of self-reflection. But with the achievements of self-reflection the teacher can tell in what sense he or she is competent, the teacher could perhaps ameliorate his or her competence, the teacher could decide about his or her way of teaching, and the teacher could teach other people about teaching."

(Bengtsson, 1995 p31)

It follows from the findings of this study that it may be helpful for teacher educators to conceptualise reflective practice not in terms of different levels of reflection, or as Zeichner (1994) has suggested domains of reflection - technical, practical, critical, for example - but in terms of the outcomes of

reflection on one's own practice. This study has revealed a hierarchy of conceptions of professional practice resulting from reflection on action as a collaborative social activity. In concentrating on the outcomes of reflection attention has been drawn to the role of reflection in achieving conceptual change learning, and how that reflection can be achieved. Questions related to a typology of reflection, such as those raised by Zeichner, do not further the pursuit of this goal. Reflection in the context of this study is seen as awareness of awareness.

This self-reflection can also be called metacognition. It allows the teacher to transcend his or her personal experience to achieve analytic awareness. To look for the causes of this developing awareness it is necessary to look to the interventions of the programme (including the interviews) which prompted reflection. For some student teachers these interventions were more or less successful in this respect and this study lends support to Eraut's (1994) thesis that Schon's notion of reflection is akin to metacognition. Phenomenography provides a powerful method of achieving reflective practice but it involves continued stimulus and support.

For example, Emma explained how reflection in action is difficult and how reflection on action can be enhanced through collaboration:

"It's very, very difficult when you get up in front of a class. You've got so much to think about - very difficult to both do the task in hand and also reflect on the task in hand. And yet once you get out of the lesson, it's confused in your own mind as to exactly what happened because you've had so much to think about..."

How does another person help?

"...if there's two of you in the classroom, one, you can just see more things going on, and secondly, the second person can detach themselves from the precise role of getting on with the task in hand and they can observe in a much more detached fashion. It's very difficult to think about what you've done dispassionately. Someone else can help you to do that..."



And how could a student teacher learn from this collaboration? Emma emphasised the importance of reflection as a social practice.

“You always learn more, or can foresee your own thoughts more effectively if you try and talk about them and argue them through rather than to just think because you’re less likely to see more than what you say.”

The outcome of the process is a teacher who can transcend his or her personal experience of the school as his or her knowledge base. The transcendence that leads to what Marton has described as analytic awareness.

## **Chapter Nine**

### **Conclusion**

#### **1. Key findings**

Of central interest among the findings of this study is that it is possible to place the different student understandings of teaching in a hierarchy with the highest level incorporating a more powerful view of teaching and learning than those below. As teacher education and the assessment of teaching competence are presently conceptualised, it is possible for student teachers to perform well enough to become qualified teachers without attaining the highest level of understanding of teaching. The evidence for this is that all of the teachers in this study achieved qualified teacher status. Student teachers who are able to perform well enough to pass may experience problems in their teaching when an expert understanding of teaching is required. The problems that such teachers are likely to encounter will centre on an inability to respond in a meaningful way to the learning needs of their pupils, an inability to develop meaningful assessment and inflexibility in the face of the need for curriculum change. In each case what is required is a willingness to focus on the object of teaching over and above the act of teaching itself.

The findings suggest that teacher educators need to reflect on the objectives of teacher education and the ways in which they assess the performance of student teachers to be sure that the understanding they intend student teachers to achieve is measured.

In seeking evidence to answer the three specific questions posed at the outset, this study has identified the understanding of teaching that is consistent with



bridging the gap between teachers' pedagogical content knowledge and their pupils' understanding of the content. It has identified and evaluated ways of achieving this goal which can generally be described as involving the relationship between learners' ways of being aware of some particular content and the teachers' ways of being aware of the same content. Further, by identifying the qualitatively different ways in which teaching was understood by the student teachers and the relationship between those ways of understanding, the study has provided a means of assessing performance.

These findings have important implications for teacher educators and policy makers. These relate to the use of data about student teachers' conceptions to guide course planning and teaching, to the development of assessment, and to the arrangements for providing teaching practice and feedback from teacher mentors.

## **2. Implications for teacher learning**

It is a basic tenet of phenomenography that learning is relational. From this it follows that the ability of a student to show understanding of, in this case, teaching depends on the nature of the phenomenon under study (Bowden et al, 1992). Clearly, the phenomenon of teaching may be apprehended differently in different contexts. The implication of this for teacher educators is that in seeking to have student teachers develop understanding, they must specify the type of phenomenon, ie teaching, of which that understanding is desired.

In an earlier chapter, Circular 9/92 (DFE, 1992) has been examined for its adequacy in specifying the phenomenon of teaching and found wanting. But, even with a detailed and unambiguous statement, the provision of contexts in which teaching can be apprehended so that the desired understanding develops is by no means easy to accomplish under the current arrangements for teacher education in the UK. This has implications for the design of learning experiences for teacher education because, put at its crudest, where knowledge transmission is equated with teaching, a student teacher cannot be expected to show understanding of teaching. Ensuring a range of contexts

and experiences, or problem situations, that require qualitatively different conceptions of teaching from students is an essential prerequisite for effective teacher education. As this study has shown, it cannot be assumed that such contexts, and qualitatively different understandings, will be found wherever teaching occurs. Thus practical teaching experience per se will not lead to understanding of teaching. The experience has to be integrated with the learning objectives of teacher education, for example by the creation of professional development schools, or some other means of linking teaching practice with the model of teacher education.

A further implication for teaching is that teacher educators will be in a better position to help student teachers learn if they know what conceptions students hold and in which direction they intend student understanding to develop. This knowledge can be used to design appropriate teaching interventions. The cases described in this study include examples of such interventions intended to bring about conceptual change by focusing students' attention on the referential and structural aspects of the conceptions they hold as these are contextualised in the experience of teaching.

The data from this study and the questions and activities that elicited that data are available to teacher educators to use in making professional judgements about the development of understanding through the teaching and learning process.

Finally, assessment of teaching and the expectations placed on teachers by pupils, parents, school governors and government will have to match the understanding of teaching that is sought. If teaching is seen by society at large as, for example, the transmission of knowledge, then student teachers will not believe that a qualitatively different conception of teaching is an appropriate goal of teacher education. Instead, they will seek to reproduce and employ teaching routines and not value the development of analytic awareness.



### **3. Methodology**

A phenomenographic study of learning something could be approached in the following ways (Booth, 1992). The researcher might delimit one or more phenomena considered to be central to the thing to be learnt and in a broad study try to map, in a population of interest, the breadth of conceptions held of those phenomena. A longitudinal study would attempt to reveal changes in conceptions over time, perhaps during teaching of the thing of interest.

The present study combined both of these approaches in a particular way. It was the design of the teacher education programme that delimited the phenomenon. It provided the frame of reference for the conceptions. But, at the same time, the programme was, to an extent, influenced by the changing conceptions revealed over time.

It might be argued that the results of the study, rather than revealing conceptions of teaching economics, describe the outcomes of a programme designed to teach a particular view of teaching. In fact, the study revealed what is possible. The outcomes as conceptions resulted from helping student teachers to seek meaning from their experience of learning to teach. The relationships found in the outcome space and the attempt to describe the effect of the programme on those conceptions provide a broader understanding of learning to teach.

### **4. Further research**

#### **4.1. Conceptions of learning to teach**

The present study has revealed conceptions of teaching. These represent the content of learning to teach. It would be possible to set out to discover conceptions of learning to teach and to explore what is involved in changing conceptions of learning to teach.

#### **4.2. The structure of awareness**

A follow up study of this group of teachers at a later stage in their professional development would allow the exploration of the changing structure of awareness. Such a study might seek to address the question whether teachers' conceptions of teaching change as they experience the role of the professional teacher in school. It might attempt to identify how the experience of teaching changes during professional practice.

#### **4.3. Professional development of teacher educators**

The data provided by the study are available for use in designing professional development programmes for teacher educators. The questions that arise relate to how this might be achieved and with what effect?

There is also the separate question of how the data might be used to design effective learning contexts for student teachers.

Research is already under way into the effectiveness of alternative arrangements for the teaching practice element of teacher education (Buchberger, 1994). It may be appropriate to use a phenomenographic perspective in such research.

#### **4.4. Towards a theory of learning**

A more extensive programme of research of the type described in this study might allow the detailed description of the dynamics of learning to teach thereby contributing to a theory of learning from a phenomenographic perspective.



## 5. Finally

At the end of the programme, Matthew was asked to say something about what he had learnt after a year on the course. He drew a distinction between what he saw as his own approach and outcomes and those of some other students. The distinction drawn said much about Matthew's view of learning at this stage but also provided an insight into the difficulty of achieving reflective practice:

“...I've learnt that you never stop, you won't stop, learning...that's been the nature of some of the discussion [among the student teachers] whether we should be taught on this course...whether you can be taught to be a teacher. I don't think you can. It's a lot about how you develop as a person through the course and the approaches...you're continuously learning, but you're never going to reach a point whereby you think, 'I've done this, I've reached the zenith, I'm a teacher'. You're a teacher but you're never going to be the ultimate teacher. I think it's important for student [teachers] to realise that. I think there're still people on the course who want something prescriptive and want some kind of path, a bulldozed path, through to being a teacher at the end of it. And it just doesn't work like that.”

This is the challenge that faces teacher educators.

## Notes

1. As Beaty *et al* (1990) point out, conceptions "refers to actual experiences, understandings and conceptualisations that people have of various phenomena. As far as their ontological status is concerned, conceptions have an experiential reality. Categories of description, on the other hand, are simply abstract tools used to characterise the conceptions."

2. This is metacognition viewed from a phenomenographical standpoint which must be contrasted with a cognitive skills approach to metacognition. According to Pramling (1988) metacognition can be seen in three steps with the third being the metacognitive level:

Step 1. a focus on what the learner is thinking about a content.

Step 2. a focus on how the learner is thinking about that content.

Step 3. a focus on the learner's thinking about her own thinking about the content.



## References

Alexandersson, M. (1994). *Method and consciousness*. Göteborg: Acta Universitatis Gothenburgensis.

Andersson, E. & Lawenius, M. (1983). *Teachers' conceptions of teaching*. Göteborg: Acta Universitatis Gothenburgensis.

Annerstedt, C. (1991). *Physical education and teachers in physical education*. Göteborg: Acta Universitatis Gothenburgensis.

Barnett, R. (1995). *The Limits of Competence*. Milton Keynes: Open University Press.

Beaty, E., Dall'Alba, G., & Marton, F. (1990). Conceptions of learning. *International Journal of Educational Research*, 14.

Bengtsson, J. (1995). What is reflection? On reflection in the teaching profession and teacher education. *Teachers and Teaching: Theory and Practice*, 1(1), 23-32.

Bennett, C. (1991). The Teacher as Decision Maker program: An alternative for career-change preservice teachers. *Journal of Teacher Education*, 42(2), 119-130.

Berliner, D. (1988). Implications of studies on expertise in pedagogy for teacher education and evaluation. In *New Directions for Teacher Assessment (Proceedings of the 1988 ETS Invitational Conference)*. Princeton, NJ: Educational Testing Service.

- Berti, A. & Bombi, A. (1988) *The Child's Construction of Economics*, Cambridge: Cambridge University Press.
- Booth, S. (1992). *Learning to program: A phenomenographic perspective*. (Göteborg studies in educational sciences, 89). Göteborg: Acta Universitatis Gothoburgensis.
- Bowden, J. (1994). The nature of phenomenographic research. In J. Bowden & E. Walsh (Eds.), *Phenomenographic Research: Variations in Method*. Melbourne: RMIT, EQARD.
- Bowden, J., Dall'Alba, G., Laurillard, D., Martin, E., Marton, F., Masters, G., Ramsden, P., Stephanou, A. & Walsh, E. (1992). Displacement, velocity and frames of reference: Phenomenographic studies of students' understanding and some implications for teaching. *American Journal of Physics*, 60, 262-9.
- Bowden, J. (1988). Achieving change in teaching practices. In P. Ramsden (Ed.), *Improving Learning: New Perspectives*. London: Kogan Page.
- Brown, S. & McIntyre, D. (1993). *Making Sense of Teaching*. Milton Keynes: Open University Press.
- Buchberger, F. (1994). Teacher education policies and models in Europe. In G. Karagözüglü (Ed.), *The Policies and Models of Teacher Training in The Council of Europe Countries*. Izmir: Dokuz Eylül University.
- Butler, D. & Faulkner, C. (1989). 'James and Michelle': A first economic awareness lesson. *Economic Awareness*, 1(3), 24-26.
- Calderhead, J. & Gates, P. (Eds.). (1993). *Conceptualising Reflection in Teacher Development*. London: The Falmer Press.
- Dahlgren, L. (1978). Effects of university education on the conception of reality. Reports from the Department of Education. University of Göteborg, No 65.



- Dahlgren, L. & Marton, F. (1978). Students' conceptions of subject matter: an aspect of learning and teaching in higher education. *Studies in Higher Education*, 3(1), 25-35.
- DES. (1992). Reform of Initial Teacher Training: a consultation document.
- DFE. (1992). Initial Teacher Training: secondary phase. Circular 9/92.
- Duffy, G. (1994). How teachers think of themselves. A key to creating powerful thinkers. In J. Mangieri & C. Collins Block (Eds.), *Creating Powerful Thinking in Teachers and Students. Diverse Perspectives*. New York: Harcourt Brace.
- Dunne, R. & Harvard, G. (1993). A model of teaching and its implications for mentoring. In D. McIntyre, H. Haggard & M. Wilkin (Eds.), *Mentoring: Perspectives on School-based Teacher Education*. London: Kogan Page.
- EcATT. (1992). Economic awareness and initial teacher training. Newsletter No 13. Harlow: Longman.
- Economics & Business Education Association. (1995). *Core Economics*. Oxford: Heinemann.
- Edwards, T. (1992). Change and Reform in Initial Teacher Education (Briefing No. 9). London: National Commission for Education.
- Eraut, M. (1994). *Developing Professional Knowledge and Competence*. London: The Falmer Press.
- Feiman-Nemser, S. & Buchmann, M. (1985). Pitfalls of experience in teacher education. *Teachers College Record*, 87, 53-65.
- Feiman-Nemser, S. & Parker, M. (1990) Making subject matter part of the conversation in learning to teach. *Journal of Teacher Education*, 41(3), 32-43.
- Fish, D. (1995). *Quality Mentoring for Student Teachers: A principled approach to practice*. London: David Fulton.

- Francis, H. (1993). Advancing phenomenography: Questions of method. *Nordisk Pedagogik*, 13(2), 68-75.
- Fuller, F. & Brown, O. (1975). Becoming a teacher. In K. Ryan (Ed.), *Teacher Education*. Chicago: University of Chicago Press.
- Furnham, A. & Cleare, A. (1988). School children's conceptions of economics. *British Journal of Educational Psychology*.
- Giorgi, A. (1986). A phenomenological analysis of descriptions of concepts of learning obtained from a phenomenographic perspective. Reports from the Department of Education. University of Göteborg, No 18.
- Gipps, C. (1994). *Beyond Testing. Towards a Theory of Educational Assessment*. London: The Falmer Press.
- Glaser, B. & Strauss, A. (1967). *The Discovery of Grounded Theory. Strategies for Qualitative Research*. New York: Aldine.
- Grossman, P. (1992). Why models matter: An alternate view on professional growth in teaching. *Review of Educational Research*, 62(2), 171-179.
- Grossman, P & Richert, A. (1988). Unacknowledged knowledge growth: A re-examination of the effects of teacher education. *Teaching and Teacher Education*, 4, 53-62.
- Habermas, J. (1974). *Theory and Practice*. London: Heinemann.
- Harris, A. & Jamieson, I. (1992). Evaluating economic awareness part two: Teaching and learning issues. *Economic Awareness*, 5(1), 23-29.
- Hodkinson, S. & Thomas, L. (1989). Balancing act. *The Times Educational Supplement*, 10 February.
- Jamieson, I. & Harris, A. (1992). Evaluating economic awareness part one: Management and organisation issues. *Economic Awareness*, 4(3), 17-21.



Johansson, J.-E. (1992). Pre-school methods in pre-school education. Göteborg: Acta Universitatis Gothenburgensis.

Kagan, D. (1992). Professional growth among preservice and beginning teachers. *Review of Educational Research*, 62(2), 129-169.

Kennedy, M. & Barnes, H. (1994). Implications of cognitive science for teacher education. In J. Mangieri & C. Collins Block (Eds.), *Creating Powerful Thinking in Teachers and Students. Diverse Perspectives*. New York: Harcourt Brace.

Kolb, D. (1984). *Experiential Learning*. Englewood Cliffs: Prentice Hall.

Lortie, D. (1975). *Schoolteacher: A sociological study*. Chicago: University of Chicago Press.

Marton, F. (1981). Phenomenography - describing conceptions of the world around us. *Instructional Science*, 10, 177-200.

Marton, F. (1986). Phenomenography - a research approach to investigating different understandings of reality. *Journal of Thought*, 21(3), 28-49.

Marton, F. (1988). Describing and improving learning. In R.R. Schmeck (Ed.), *Learning Strategies and Learning Styles*. New York: Plenum Press.

Marton, F. (1994a). On the structure of teachers' awareness. In I. Carlgren, G. Handal & S. Vaage (Eds.), *Teachers' Minds and Actions: Reflections on teachers' thinking and practice*. London: The Falmer Press.

Marton, F. (1994b). Phenomenography. In T. Husén & T. Neville Postlethwaite (Eds.), *The International Encyclopedia of Education*. Oxford: Pergamon.

Marton, F. (1994c). On the structure of awareness. In J. Bowden & E. Walsh (Eds.), *Phenomenographic Research: Variations in Method*. Melbourne: RMIT, EQARD.

Marton, F. (1994d). Personal communication. 28 November.

Marton, F. & Säljö, R. (1976). On qualitative differences in learning - I. Process and outcome. *British Journal of Educational Psychology*, 46, 4-11.

Marton, F. & Säljö, R. (1984). Approaches to learning. In F. Marton, D. Hounsell & N. Entwistle (Eds.), *The Experience of Learning*. Edinburgh: Scottish Academic Press.

McIntyre, D. (1993). Theory, theorising and reflection in initial teacher education. In J. Calderhead & P. Gates. (Eds.), *Conceptualising Reflection in Teacher Development*. London: The Falmer Press.

National Curriculum Council. (1990). *Curriculum Guidance 4: Education for Economic and Industrial Understanding*. National Curriculum Council.

Newmann, F. (1990). Higher order thinking in teaching social studies: a rationale for the assessment of classroom thoughtfulness. *Journal of Curriculum Studies*, 22(1), 41-56.

Posner, G., Strike, K., Hewson, P. & Gertzog, W. (1982) Accommodation of a scientific concept. Towards a theory of conceptual change. *Science Education*, 66, 211-227.

Pramling, I. (1983). *The child's conception of learning*. Göteborg: Acta Universitatis Gothoburgensis.

Pramling, I. (1988). Developing children's thinking about their own learning. *British Journal of Educational Psychology*, 58, 266-278.

Prawat, R. (1992). From individual differences to learning communities - our changing focus. *Educational Leadership*, 49(7), 9-13.

Reynolds, A. (1992). What is competent beginning teaching? A review of the literature. *Review of Educational Research*, 62(1), 1-35.

Richert, A. (1990). Teaching teachers to reflect: A consideration of programme structure. *Journal of Curriculum Studies*, 22, 509-527.



- Resnick, L. (Ed.). (1989). *Knowing, Learning and Instruction: Essays in Honour of Robert Glaser*. Hillsdale, NJ: Erlbaum.
- Rogoff, B. & Lave, J. (Eds.). (1984). *Everyday Cognition: Its Development in Social Context*. Cambridge, MA: Harvard University Press.
- Ross, A. et al. (1989). *Children's Ideas About the World of Work*, London: Polytechnic of North London Press.
- Säljö, R. (1979). Learning in the learner's perspective. I. Some common-sense conceptions. Reports from the Department of Education. University of Göteborg, No. 76.
- Schön, D. (1983). *The Reflective Practitioner: How professionals think in action*. New York: Basic Books.
- Schön, D. (1987). *Educating the Reflective Practitioner: Towards a new design for teaching and learning in the professions*. San Francisco: Jossey-Bass.
- Shulman, L. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, 15(2), 4-14.
- Shulman, L. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review*, 57, 1-22.
- Stenhouse, L. (1971). The Humanities Curriculum Project. In R. Hooper (Ed.), *The Curriculum: Context, Design & Development*. Edinburgh: Oliver & Boyd.
- Stones, E. (1989). Pedagogical studies in the theory and practice of teacher education. *Oxford Review of Education*, 15(1), 3-15.
- Sykes, G. (1986). Teaching as reflective practice. In K. Sirotnik & J. Oakes (Eds.), *Critical Perspectives on the Organisation and Improvement of Schooling*. Boston: Kluwer Nijhoff.
- Thomas, L. (1994). Preparation for adult economic life - The case for subject-based classroom relevance. *Economic Awareness*, 6(2), 7-12.

Thomas, L. (Ed.). (1994). *Teaching and Learning the New Economics*. Oxford: Heinemann.

Thomas, L. & Hodgkinson, S. (1988). What is economic awareness? *Economic Awareness*, 1(1), 5-11.

Trigwell, K. (1994). The first stage of a phenomenographic study of phenomenography. In J. Bowden & E. Walsh (Eds.), *Phenomenographic Research: Variations in Method*. Melbourne: RMIT, EQARD.

Van Manen, M. (1977). Linking ways of knowing with ways of being practical. *Curriculum Enquiry*, 6, 205-28.

Winter, R. (1991). Outline of a general theory of professional competences. In M. Maisch & R. Winter, *The Development and Assessment of Professional Competences*. Chelmsford: Essex Social Services Department and Anglia Polytechnic.

Wood, K. (Ed.). (1992). *A Guide to Economic Awareness in the National Curriculum*. Harlow: Longman.

Zeichner, K. (1994). Research on teacher thinking and different views of reflective practice in teaching and teacher education. In I. Carlgren, G. Handal & S. Vaage (Eds.), *Teachers' Minds and Actions: Reflections on teachers' thinking and practice*. London: The Falmer Press.

